

DOCKETED

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2024 WILDLAND FIRE ANNUAL OPERATING PLAN

Between

THE GEYSERS STEAM FIELD OPERATORS

Calpine/Geysers Power Company, LLC.
Northern California Power Agency (NCPA)
Mayacma Geothermal (Open Mtn Energy)
Ormat Nevada Inc.



**Open Mountain
Energy**



And

CAL FIRE - SONOMA-LAKE-NAPA UNIT



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2024 WILDLAND FIRE OPERATING PLAN

I. IDENTIFICATION

This Operating Plan is between the California Department of Forestry and Fire Protection (CAL FIRE) Sonoma-Lake-Napa Unit, and Calpine/Geysers Power Company, LLC (GPC), Northern California Power Agency (NCPA), Mayacama Geothermal, and Ormat Nevada Inc. (Ormat), referred to as the “Steam Field Operators”.

II. AUTHORITY

This plan will be active upon signature of the parties, and will be reviewed annually each April, or as needed.

III. PURPOSE

This Wildland Fire Operating Plan provides the fire officers and employees of the entity’s guidelines, goals, and information necessary to mitigate wildland fires.

IV. MAPS

The latest maps indicating main infrastructure ownership will be used to display the information required in this Operating Plan. Maps will be kept on file in the headquarters office of each entity. The following items shall be shown on each map according to the attached standard legend. See appendix B, C, D and E.

- A. Power Plant names and numbers
- B. Road Names
- C. Gate Codes and locations
- D. Fire History
- E. Routes of travel
 - a. 25 maps of the Pre-Plan/Routes of travel will be cached at the 3 guard sheds, East Admin Center, and NCPA Plant 1.
- F. Latitude and Longitude for Helipads, Helispots, Portable Dip Sites and Power Plants Nad 83 (i.e. N38° 45.22’ x W122° 44.96’).
<http://www.findlatitudeandlongitude.com/?loc=nad83>
- G. Control Room Phone numbers
- H. Water supplies
- J. Community Refuge Area’s
- K. Emergency Civilian Evacuation Route – Map (being developed)

V. OPERATING PROCEDURES

A. Notification and Reports:

- A. Notification of any fires or emergency on lands in The Geysers can be made directly to the CAL FIRE Sonoma Lake Napa Unit Emergency Command Center 24-hour phone number 707-963- 9636, and or 911. Information will be provided per the attached “SCRIPT” (see appendix J).

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B. CAL FIRE responding Chief Officers will call the Steam Field Control Rooms if a wildland fire is threatening The Geysers

B. Aircraft Use

It is a goal of this plan for The Geysers Steam Field Operators to develop and maintain ridge top and existing water supply locations to support Helicopter water dropping (See appendix F). These sites include but are not limited to:

Negu 13 (Calpine)

E Site (NCPA)

Pine Summit (South Lake County Fire) to move to Boggs GOAL.

Middletown (South Lake County Fire)

Pad 30 (Calpine – GOAL – multi tank – night operations – L.A. County Bravo 69 example)

Ottoboni Ridge (Calpine – Hydrant OF51-11 – GOAL)

Calistoga Power Plant Area (Calpine) should be explored for a new portable dip site GOAL.

Bottle Rock Power Plant Area (Mayacma Geothermal) should be explored for a new portable dip site GOAL.

C. UAS / Drone Use

During a wildland fire there shall be no UAS / Drone use in the Steam Field Area without coordination with CAL FIRE.

D. Steam Field Representatives:

It is mutually agreed that any wildland fire in The Geysers will require a Steam Field Representative as the single point of contact for the affected area. The single point of contact person shall have the delegated authority to make decisions quickly, as needed.

E. Interagency Sharing of Communications Systems and Frequencies:

This non repeated channel is in place for Steam Field Operators and First Responders to communicate. It is a MURS (Multi Use Radio Service) frequency.

DISPLAY	RX FREQ	RX CTCSS	TX FREQ	TX CTCSS	PWR	W/N	NOTES
XLK INTEROP	151.8200	206.5	151.8200	206.5 H	N	N	MURS

“LNU East Tone 6” (Mt. St. Helena) is the primary Command Frequency for First Responders to a wildland fire. This repeater provides coverage on the top of the ridge and east side.

“LNU West Tone 14” (Geyser Peak) is the alternate Command Frequency for First Responders to a wildland fire. This repeater provides coverage on the top of the ridge and west side.

“CDF TAC 6” is the primary Tactical Frequency for First Responders.

The ability for all steam field operators and first responders to communicate on a common channel should be worked towards. The installation of a “Black Box” that will combine all 800 MHz, VHF and UHF radios into a single channel will accomplish this GOAL.

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F. Shared Equipment Facilities and Services:

Use of equipment, facilities, or services should be jointly developed according to the goals of this operating plan. i.e. Helicopter Dip Locations, Fuel Breaks, etc.

G. Wildland Fire Detection System:

Steam Field Operators should use available technology for early fire detection and reporting. The support and expansion of the current “Fire Camera” systems on Calpine and NCPA Property are the currently recognized examples of this goal. This will give Steam Field Operators and CAL FIRE the ability to have real time information and early detection of wildland fires.

Continue to support development of Artificial Intelligence software for automated fire detection utilizing the camera network(s), including those The Geysers area. Seek partnerships with research groups to advance emerging platforms and technologies, including satellite links, to advance fire modelling techniques and early detection.

H. Post-Incident Action Analysis:

Upon the request of either party, a post-incident action analysis (critique) may be initiated for any emergency response to obtain information that may enhance the administration of this Wildland Fire Operating Plan. Any such critique should involve members of the incident command and general staffs from CAL FIRE, and officers from each involved Steam Field Operator.

I. First Responder Orientation

Annually the First Responders shall organize a field visit for resources to meet in The Geysers. The goal is to tour a power plant, a control room, well pad/site visit and use the road system with the route of travel map.

VI. FIRE PREVENTION ACTIVITIES

A. General Cooperative Activities:

All Steam Field Operators, to the extent possible, should provide fire prevention programs, inspections, and enforcement as necessary to adequately address the fire problem in their areas. In addition, Steam Field Operators are encouraged to undertake joint prevention activities in areas of mutual interest whenever practical.

B. Information and Education:

1. RED FLAG (High Fire Hazard): The Steam Field Operators should advise each other of increased wildland fire danger and will coordinate activities, including patrols, as necessary to avoid any duplication of effort or public confusion. The goal of patrols is to be active on Red Flag Days issued by the National Weather Service. <http://www.wrh.noaa.gov/>
2. Joint Press Releases: Steam Field Operators should develop joint press releases on cooperative fire prevention issues to ensure that the interests of all affected parties are addressed.

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3. Fire Prevention Signs: Coordination and placement of fire prevention is a goal.

C. Engineering:

1. Industrial Operations Fire Prevention Field Guide will be used. See appendix “G”.

<https://osfm.fire.ca.gov/media/8481/fppguidepdf102.pdf>

2. The Geysers Steam Field is known to release hydrogen sulfide (H₂S) gas in amounts of parts per million that can be hazardous to your health (PEL 10 ppm) up to and including death. It is a Standard Operating Procedure that all groups of people or individuals will carry a H₂S detector. When entering these gated areas these detectors will be provided for initial responders. The detectors should be made available for each of the first ten First Responder vehicles at the following gates or provided by the Steam Field point of contact

Bottle Rock/Mayacma Gate: Bottle Rock Road Gate (GOAL when open)

Calpine Gates:

- Geysers Road (Gate 1)
- Sawmill Flat Road (Gate 2 - unmanned)
- Socrates Mine Road (Gate 3)
- Pine Flat Road (Gate 4)
- Coldwater Creek Road (manned M-F, 6 a – 6 p)
- West Ford Flat Gate (unmanned)
- Bear Canyon Gate (unmanned)
- Aidlin Gate (unmanned)
- Jackson Hole Gate (unmanned)



NCPA: Ridge Road Gate

This is what the sensors look like. They are about the size of a pager. They are typically clipped near the breaking zone or onto the brim of the safety helmet. For Wildland Fires that require more than 10 first responder vehicles the Steam Field Operators will work together to share available H₂S detectors to make sure every vehicle has a H₂S monitor. The H₂S monitors will be returned to the Steam Field Operators when the First Responders leave the gated access points listed above under item (C. 2).

Lifecycle Use & Maintenance:

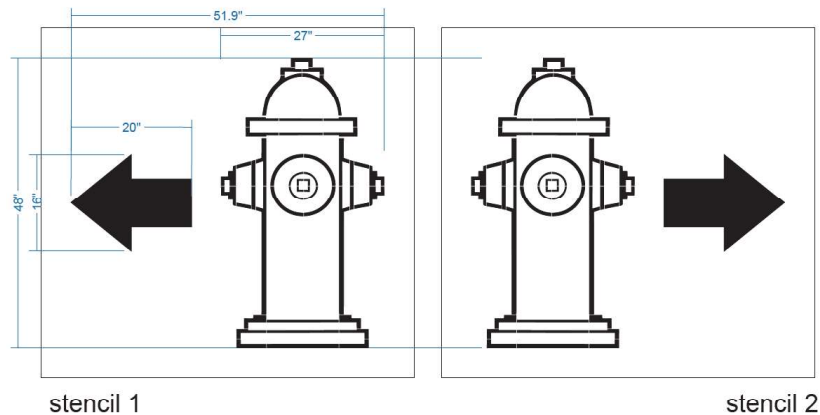
1. H₂S Detectors
 - a. The detectors will be stored inside each Guard Station in a secured box (Cal Fire/South Lake County Fire will have exclusive access) and in The Calpine Geysers Control Room.
 - b. Activated detectors will be “bump” tested monthly (May – November).
 - c. Detectors will be replaced per the manufacturer’s requirements.

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2. Steam Field Operators will have a goal of expanding their “Fire Hydrant” capabilities within their infrastructure in the Steam Field. The twelve new “Fire Hydrants” that Calpine/GPC, LLC installed in the spring of 2015 to current are an example of this goal. In addition, develop a standard to identify non-traditional fire hydrants through a combination of signage and other visual indicators.
 - a. Hydrants in The Geysers are mostly an industrial combination of valves, pressure reducers and adapters for 2.5” NH and Cam Lock Fittings. The look nothing like a Fire hydrant. A reflective, highly visible aluminum sign on a metal post should be installed at each industrial filling location. This is a GOAL. This is a 24” x 24” example:



- b. Hydrants in The Geysers are at “Well Pads” or other non-traditional industrial facilities and locations. They are hard to find without the map, and in the dark or smokey conditions. A hydrant symbol with an arrow pointing towards its location should be painted on the roads. This is a GOAL. This is a 48” x 52” example:



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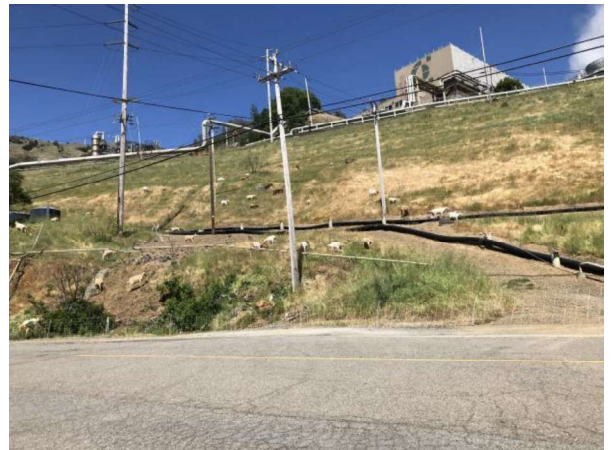
3. Steam Field Operators shall abide by Public Resource Code (PRC), Section 4291 in creating and maintaining defensible space around all new and existing infrastructures. Annual inspections should be coordinated with Cal Fire in late February/early March to identify and target problematic areas. In summary this will include these minimums but could be increased as needed:

- 0' to 5' – Noncombustible zone with noncombustible materials
- 5' to 30' – Removal of all flammable vegetation.
- 30' to 100' - Reduce all flammable fuels.
- 100' to 300 – Reduce of flammable fuels around hazardous facilities. PRC4291.3
- Cal Fire and Steam Field Operators shall review this annually.

<https://www.fire.ca.gov/programs/communications/defensible-space-prc-4291/> (PRC 4291)

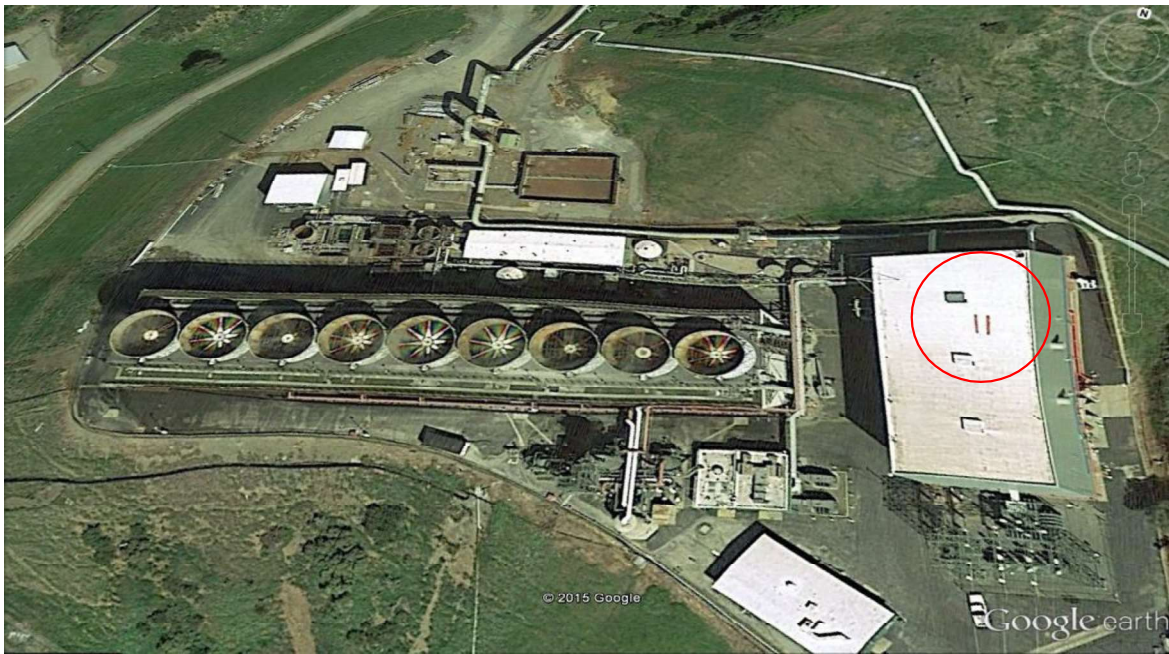
LE100 Defensible Space Inspections may be provided to offer feedback and guidance on how to meet the expectations of PRC 4291.

For several years, Steam Field Operator Calpine/GPC have brought in, brush-clearing goats who eat and thrive on unwanted vegetation at The Geysers. Visits typically last about a month at a time, with several groups of goats moving around the 28,447 acres (44.5 sq mile) span of Calpine's operations at The Geysers. In mid-May, 250 goats will be deployed to clear 3' – 4' grass expanding defensible space, minimizing wildfire hazard to meet this goal.



4. Steam Field Operators should have a goal of painting and maintaining power plant numbers, or facility names on the roofs of power generating facilities. The intent of this goal is for aviation resources to be able to quickly identify facility and infrastructure that are threatened by Wildland Fire and relay that information to ground resources responding. Calpine Eagle Rock Unit 11 Power Plant shown in the picture is an example of this goal.

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5. Steam Field Operators should have a goal of providing road signage at every intersection in the Steam Field consistent with PRC4290. Signage should be added for every Helipad and Helispot. Signage should be added for facility directions and locations. This goal is established to assist first responder to a Wildland Fire the ability to know where they are, and where they are going even under hazardous conditions.

The signage guidelines are:

- a. Signs and addresses will be made of all-weather metal construction.
- b. Lettering will be block, white, ½ inch in width, and a minimum of 6 inches in height. (Californian Fire Code, Section 505.1)

<https://up.codes/viewer/california/ca-fire-code-2022/chapter/5/fire-service-features#505>

Sign should have a white border and reflective lettering.

- c. Sign will be mounted on an all-weather metal support structure, or to the addressed structure. Signs will not be mounted on wood posts or structures.

The photo below is an example of existing road signage that meets this goal.

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As a reference, Public Resource Code Section 4290, Article 3: Signing and Building Numbering, sub sections 1274.00 – 1274.10.

https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=4290.&lawCode=PRC

6. CAL FIRE recommends as a goal that Steam Field Operators develop 5 or more ridge top helicopter dipping locations that can be kept full with available water infrastructure in the Steam Field. This goal will allow helicopters quick and safe access for Wildland Fire suppression. See appendix F for an example product and price estimate. This example is not intended to endorse any specific product.
7. Steam Field Operators should have a goal of creating safe ingress and egress on the existing road infrastructure for employees, contractors, and first responders. This will allow for evacuations and assist in containing the spread of Wildland Fires. The flammable vegetation on the sides of these roadways should be reduced by 50 feet on each side. Shaded fuel break methodology should be utilized where applicable. Annual inspections should be coordinated with CAL FIRE in late February/early March to identify and target problematic areas. Pre-identified roads to receive fuel reduction are:

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- a. From 9400 to 12500 Cloverdale Geysers Road.
 - b. From West Squaw Creek Road to Caldwell Pines Road to Lakeview Road to JD Kingcade Road to Socrates Mine Road to Ridge Road (to stop at NCPA Plant 2) to Davies Road (Unit 16 / Quicksilver).
 - c. From Pine Flat Road MPM 11.5 to JD Kingcade Road.
 - d. Big Sulphur Creek Road.
 - e. From Geysers Road MPM 18 north to Cloverdale Geysers Road.
 - f. From Big Geysers Road to Ottoboni Road to Squaw Creek Road to Lakeview Road
 - g. Sawmill Road to Lakeview Road.
 - h. Socrates Mine Road to Ridge Road (This is mostly outside of the Steam Field area but is still a goal).
 - i. From the Bottle Rock Road intersection of High Valley Road to the power plant.
 - j. Cold Water Creek Road
8. Pre Attack Map / Route in Travel Guides will be available at each gate location where the H₂S monitors are kept for distribution. These maps and travel guides will be 11" x 17", laminated and in color. There will be 25 of these available at each location. Each Steam Field Operator will use only this map and route in travel guide when communicating with all First Responders. The Calpine Geysers Administrative Center (GAC) will keep an additional 25 of these guides available for surge capacity, they do not have to be laminated. The laminated maps will be stored inside each Guard Station .
9. Temporary Refuge Areas:
- a. West Field Office (Calpine)
 - b. Geysers Administration Center (Calpine))
 - c. Lakeview Unit 17 Power Plant (Calpine)
10. Prescribed Fire Use: Prescribed Fire has beneficial uses to all parties. Prescribed Fire should be in accordance with a CalFire approved prescribed fire plan.

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D. Enforcement:

1. Burning and Campfire Permits:
 - a. Only CAL FIRE personnel will issue permits, when required, for project burning on State Lands:
 - 1) No burning be allowed during any time period when burn/campfire permits have been suspended.
 - 2) CAL FIRE will be notified prior to the start of any burning operation when burn permits are required.
 - b. Authorized CAL FIRE personnel may issue permits for burning when required on SRA (State Responsibility Area) lands.
 - c. Campfire permits are available online._
<https://www.readyforwildfire.org/permits/campfire-permit/>
 - d. The suspension of burning permits on SRA lands is governed by state law and will be coordinated by the CAL FIRE Unit Chief.
2. Suspension, Restrictions, and Closures: Steam Field Operators shall comply with these requests.
3. Fire Origin and Cause Determinations: CAL FIRE agency personnel will conduct an origin and cause determination of any wildfire originating in SRA DPA.

VII. GENERAL PROVISIONS

A. Periodic Reviews:

Steam Field Operators and CAL FIRE will have a goal of conducting on-the-ground inspections of the steam field operations under this Operating Plan as requested by either party.

B. Updating of Plan:

All parties should meet annually by April 15th to review and update the Operating Plan as necessary.

C. Public Information:

All party's will attempt to provide only current, accurate information on their own activities to the public or media, to refer inquiries to the appropriate agency, or to develop a joint response when the topic relates to cooperative efforts under this Operating Plan.

D. Budget Changes:

If during the effective period of this Operating Plan any party receives a budget change (increase or decrease) that could significantly modify the goals of this plan, a revision to the plan should be jointly updated.

E. Changes During the Year:

If during the effective period of this Operating Plan any party requires a change that could significantly modify the provisions of this plan, a revision to the plan will be jointly updated.

F. Agency Reviews and Investigations:

Reviews or investigations will follow each party's procedure. Wildland Fire investigations will be coordinated by CAL FIRE.

G. Information Exchange:

The Healdsburg CAL FIRE Battalion Chief is designated as the primary contact.

Paul Fleckenstein
Battalion Chief
Healdsburg Battalion
Sonoma-Lake-Napa Unit
CALFIRE
707.889-4212 cell
707 431-2613 fax
Paul.Fleckenstein@fire.ca.gov

H. Inter Party Training:

Interagency training activities can be mutually beneficial and are encouraged to:

1. Participate in shared local level training at each other's facilities on an ongoing basis.
2. Allocate available slots in appropriate training sessions for personnel of either party.
3. Utilize instructors from either party when available.

I. Consumables:

Use of consumables, i.e. drinking water, ice, and food will be replaced by Cal Fire

J. Internet/Phone:

Use of the internet and phone can be made available by contacting the Steam Field Operator.

K. Media Access:

The Geysers steam field operators along with the private property owners have requested that the media not be allowed onto the premises due to safety and private property concerns.

- Reference California Penal Code Section - CPC 409

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This 2024 Operating Plan has been authorized and approved by the following agency administrators:

DocuSigned by:  000FC4F0072C44B... Calpine Corporation// Geysers Power Company, LLC	12/30/2024 Date
Signed by:  737744819CA14D4... Northern California Power	12/19/2024 Date
Signed by:  1C75388C3892451... Mayacma Geothermal (Open Mtn Energy)	12/20/2024 Date
Signed by:  990A2AF49F87493... Ormat Nevada Inc.	12/19/2024 Date
DocuSigned by:  0004120944DE425... Chief – Sonoma Lake Napa Unit California Department of Forestry & Fire Protection	12/19/2024 Date

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APPENDIX A

Agency Personnel Contact List

- CAL FIRE PERSONNEL AND NOTIFICATION LIST
- STEAM FIELD OPERATORS PERSONNEL AND NOTIFICATION LIST

CAL FIRE LNU

Personnel & Notification:

Chief Officers

C1400 Unit Chief	Matt.Ryan@fire.ca.gov	707-738-4148
D1401 West Operations	Ben.Nicholls@fire.ca.gov	707 292-5215
D1403 North Operations	Paul.Duncan@fire.ca.gov	707 481-2362
B1411 River Battalion	Marshall.Turbeville@fire.ca.gov	707 529-2523
B1413 Healdsburg Battalion	Paul.Fleckenstein@fire.ca.gov	707 889-4241
B1417 Middletown Battalion	Vacant	707-000-0000
B1418 Konocti Battalion	Peter.Avansino@fire.ca.gov	707-806-7347
D1408 Pre-Fire Division	Mike.Wink@fire.ca.gov	707-889-4225

<u>Emergency Command Center</u>	24hr	707 963-4112
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<u>Lake County Battalion Chief</u>	24hr	707 963-1599
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CALPINE / GEYSERS POWER COMPANY

Personnel & Notification:

Dispatch Center	Name: Control 1	707 431-6911 707 431-6008 707 431-6001
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Title: Safety	Name: Peter Arthur	Office: 707-431-6026 Cell: 707-799-9347
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Title: EHS/Safety Manager	Name: Saima Baig	Office: 707-431-6062 Cell: 713-820-0065
Emergency Satellite phone:		011-881-623-400-767
Regional Vice President	Name: Robert Parker	Office: 925-382-4111
Civil Maintenance & Roads	Name: Randy Yates	Office: 707-431-6263 Cell: 707-272-2466
Security/Gate Access	Name: Jody Batten	Office: 707-431-6991 Cell: 408-231-0533
Gov/Reg & Media	Name: Danielle Matthews Seperas	Cell: 916-524-3468 Office: 916-491-3377

NORTHERN CALIFORNIA POWER AGENCY

Personnel & Notification:

Title: Compliance Manager	Name: Anthony Allegra	Office: 707 987-4032 Cell: 707 280-6918
Title: Geothermal Plant Manager	Name: Jim Beach	Office: 707-809-6007 Cell: 707-531-3562
Title: Control Room		Office: 707 987-3415

MAYACAMA GEOTHERMAL

Personnel & Notification:

Title: Geothermal Resource Manager	Name: John Casteel	Office: 260 8351 Cell: 503 349 4411
Title: Interim Site Watchman	Name: Richard Lacey	Office: 707 987-2532 Cell: 707 484-1489
Title: AltaRock Representative	Name: Michael Moore	Cell: 541 410-1795

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ORMAT (Western GeoPower)

Personnel & Notification:

Title: Manager, Regulatory Affairs	Name: Scott Nichols	Cell: 458-224-4294
Title: Site Manager	Name: Tim Smith	Work: 707-894-2636
		Cell: 707-324-9963

PACIFIC GAS & ELECTRIC

Personnel & Notification:

Title:	Name:	Cell:
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Pre Plan Map (Confidential)



2022 WILDLAND FIRE OPERATING PLAN

APPENDIX C

Pre Plan Travel Routes (Confidential)

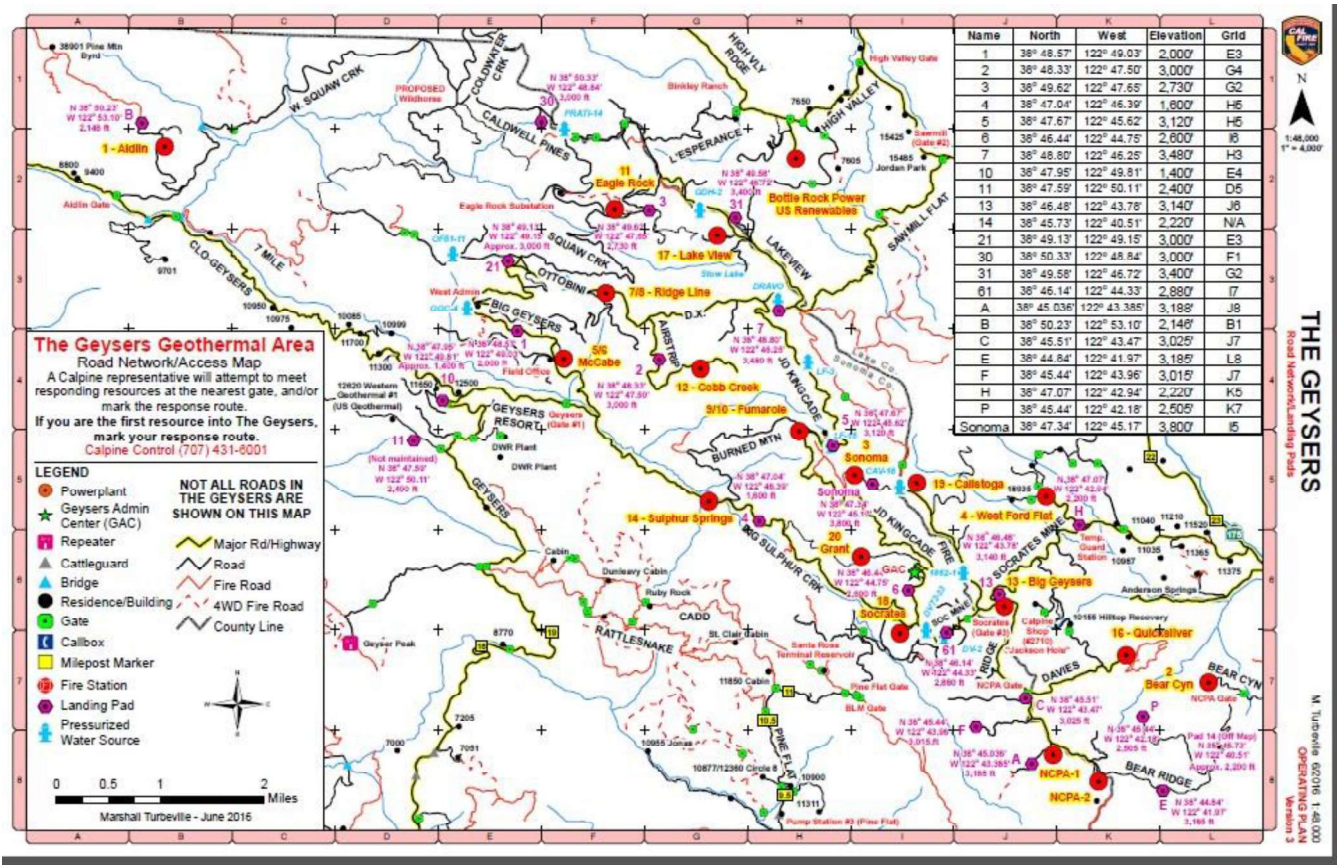
#	Name	Address	Co	Powerplant		Access (s = straight, r = right, l = left)				Nearest Landing Pos		
				North	West	Geysers	Pine Flat	Sawmill Flat	Socrates Mine	North	West	Name
1	Aldin	9500 Geysers (Near 9400)	Son	38° 50.030'	122° 52.863'	Cloverdale-Geysers Road to West Squaw Creek Road				38° 50.23'	122° 53.10'	B
2	Bear Canyon	20058 Ford	Lak	38° 45.768'	122° 41.508'	Access at 19759 Highway 175, just south of McKinley Drive, near Middletown (#2710)				38° 46.73'	122° 40.51'	14
3	Sonoma	None (Only Visible Plant from Sonoma County)	Son	38° 47.413'	122° 45.370'	(s) Big Sulphur Crk, (r) Socrates Mine, (l) Fire Rd	(r) Socrates Mine, (l) Fire Rd	(l) J.D. Kingcade, (l) Fire Rd (unmarked gravel rd)	Past guard post, (r) Fire Rd for 1.5 miles	38° 47.34'	122° 45.17'	Sonoma
4	West Ford Flat	18715 Ford Flat	Lak	38° 47.283'	122° 43.329'	Access off of Socrates Mine Road off of Highway 175, (r) Ford Flat Road				38° 47.07'	122° 42.94'	H
5&6	McCabe	13025 Big Geysers	Son	38° 48.298'	122° 48.507'	(l) Big Geysers		(s) DX, (s) Ottoboni, (s) Big Geysers	(r) Big Sulphur Crk, (r) Big Geysers	38° 48.57'	122° 49.03'	1
7&8	Ridge Line	None	Son	38° 48.905'	122° 48.081'	(l) Big Geysers, (s) Ottoboni		(s) DX, (s) Ottoboni	(r) J.D. Kingcade, (l) DX, (s) Ottoboni	38° 49.13'	122° 49.15'	21
9&10	Fumarole	None	Son	38° 47.766'	122° 46.003'	(s) Big Sulphur Crk, (l) Burned Mtn	(r) Socrates Mine, (l) J.D. Kingcade	(s) DX, (l) J.D. Kingcade	(r) J.D. Kingcade	38° 47.67'	122° 45.62'	5
11	Eagle Rock	Near 18250 Squaw Crk	Son	38° 49.619'	122° 47.985'	(l) Big Geysers, (s) Ottoboni, (l) Squaw Crk		(r) Lakeview, (l) Squaw Crk	(r) J.D. Kingcade, (r) DX, (l) Lakeview	38° 49.62'	122° 47.65'	3
12	Cobb Creek	None	Son	38° 48.312'	122° 47.050'	(l) Big Geysers, (s) Ottoboni, (l) Airstrip		(s) DX, (l) Airstrip	(r) J.D. Kingcade, (l) DX, (l) Airstrip	38° 48.33'	122° 47.50'	2
13	Big Geysers	3635 Socrates Mine	Lak	38° 46.385'	122° 43.744'	(s) Big Sulphur Crk, (r) Socrates Mine	(r) Socrates Mine		Top of grade at 3-way intersection (straight)	38° 46.48'	122° 43.78'	13
14	Sulphur Springs	None	Son	38° 47.181'	122° 46.933'	(s) Big Sulphur Crk	(l) Socrates Mine, (l) Big Sulphur Crk	(s) DX, (l) J.D. Kingcade, (r) Burned Mtn	(r) Big Sulphur	38° 47.04'	122° 46.39'	4
16	Quicksilver	11031 Hot Springs	Lak	38° 45.985'	122° 42.420'		(r) Socrates Mine (r) Ridge Rd, (l) Davies Rd		(l) Castle Springs/Verdant Vales at (l) Ridge Rd, (l) Davies	38° 45.51'	122° 43.47'	NCPA-C
17	Lake View	20100 Geysers	Son	38° 49.405'	122° 46.895'	(l) Big Geysers, (s) Ottoboni, (s) DX, (l) Lakeview	(r) Socrates Mine, (l) J.D. Kingcade, (r) DX, (l) Lakeview	(r) Lakeview	(r) J.D. Kingcade, (r) DX, (l) Lakeview	38° 49.58'	122° 46.72'	31
18	Socrates	12600 Pine Flat	Son	38° 46.128'	122° 44.861'	(s) Big Sulphur Crk	(r) Socrates Mine, (l) Big Sulphur		(r) Big Sulphur	38° 46.14'	122° 44.33'	61
19	Calistoga	8550 Socrates Mine	Lak	38° 47.374'	122° 44.714'	(s) Big Sulphur Crk, (r) Socrates Mine, (l) Fire Rd		(l) J.D. Kingcade, (l) Fire Rd (unmarked gravel rd)	Past guard post, (r) Fire Rd for 1.5 miles	38° 47.34'	122° 45.17'	Sonoma
20	Grant	None	Son	38° 46.740'	122° 45.304'	(s) Big Sulphur Crk, (l) Socrates Mine, (l) J.D. Kingcade, (l) past GAC	(r) Socrates Mine, (l) J.D. Kingcade, (l) past GAC	(s) DX, (l) J.D. Kingcade, (r) before GAC	(r) J.D. Kingcade, (l) past GAC	38° 46.44'	122° 44.75'	6
VERSION 3 - June 2016 Masaiul Travel via	GAC (Geysers Admin Center) - Cal Pine Control/Dispatch	4500 John Kingcade	Son	38° 46.626'	122° 44.693'	(s) Big Sulphur Crk, (r) Socrates Mine, (l) J.D. Kingcade	(r) Socrates Mine, (l) J.D. Kingcade	(s) DX, (l) J.D. Kingcade	(r) J.D. Kingcade	38° 46.44'	122° 44.75'	6
	West Admin	14999 Big Geysers	Son	38° 48.771'	122° 49.433'	(l) Big Geysers		(s) DX, (s) Ottoboni, (s) Big Geysers	(r) J.D. Kingcade, (l) DX, (s) Ottoboni, (s) Big Geysers	38° 48.57'	122° 49.03'	1
	Wildhorse (Proposed)	7000 Coldwater Creek	Son	38° 50.505'	122° 49.804'	(l) Big Geysers, (s) Ottoboni, (s) DX, (l) Lakeview, (r) Caldwell Pines	(r) Socrates Mine, (l) J.D. Kingcade, (r) DX, (l) Lakeview, (r) Caldwell Pines	(r) Lakeview, (r) Caldwell Pines	(r) J.D. Kingcade, (r) DX, (l) Lakeview, (r) Caldwell Pines	38° 50.33'	122° 48.84'	30
	AttaRock Energy	7385 High Valley	Lak	38° 50.104'	122° 46.104'	Near 14531 Bottie Rock Rd, west onto High Valley through electronic gate (D911#)						
	NCPA #1	In the area of 12650 Ridge Road	Son	38° 45.113'	122° 43.155'		(r) Socrates Mine (r) Ridge Rd		Top of grade at 3-way intersection, turn left onto Ridge Rd	38° 45.036'	122° 43.385'	NCPA-A
	NCPA #2		Son	38° 44.911'	122° 42.672'							NCPA-A
	Maintenance Field Office	13030 Big Geysers	Son	38° 48.327'	122° 48.680'	(l) Big Geysers		(s) DX, (s) Ottoboni, (s) Big Geysers	(r) Big Sulphur Crk, (r) Big Geysers	38° 48.57'	122° 49.03'	1
	Old Drive	Near 15045 Geysers	Son	38° 47.666'	122° 49.123'	Off of Healdsburg - Geysers Road				38° 47.96'	122° 49.81'	10
	Santa Rosa Reservoir	Near 11950 Pine Flat	Son	38° 45.772'	122° 45.634'	Top of Pine Flat				(l) Pine Flat		
	Western Geothermal	12620 Geysers	Son	38° 47.725'	122° 50.237'	Healdsburg-Geysers Road to marked access.				38° 47.59'	122° 50.11'	11

Coldwater Creek Road: Bottomrock to W. Squaw Crk. First Gate: 3008, old Davis Garnet before entry (707) 279-4011. Second Gate: 1670 (Genevieve Hought), Third/Fourth Gates: 1150 Chris/Candl Marmay (707) 626-4483, (707) 930-1775
 Red is known Sonoma County/REDCOM address. Purple is Lake County
 Highlighted route is the shortest response. Post 1 = Geysers Rd Post 2 = Sawmill Flat Post 3 = Socrates Mine

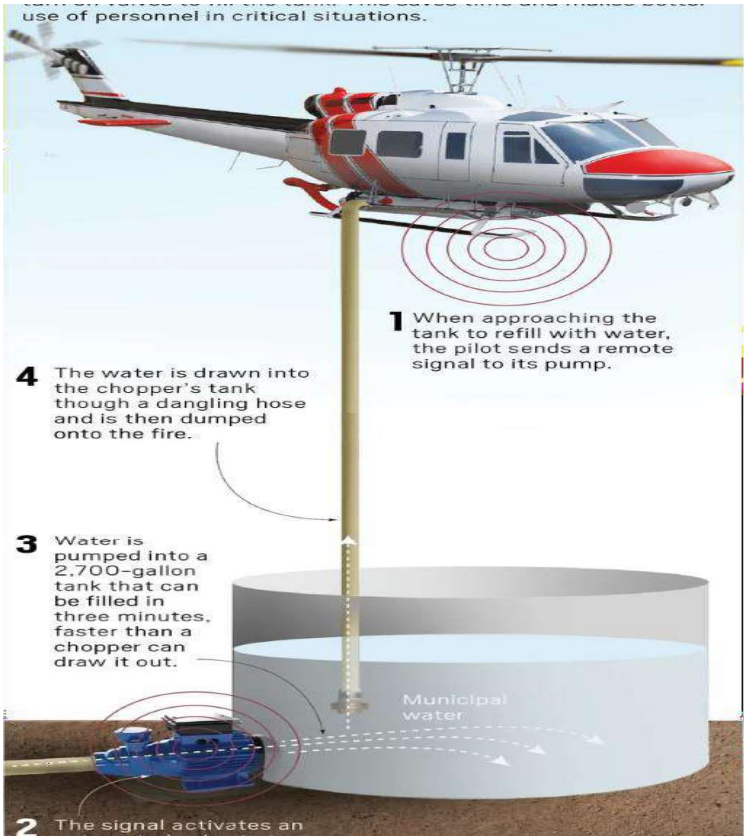
2022 WILDLAND FIRE OPERATING PLAN

APPENDIX D

Helicopter Landing Zones (Public)



2022 WILDLAND FIRE OPERATING PLAN



March 6, 2024

16' HeloPod Price Quote

CAL FIRE – LNU Unit - Napa County		Quote#: 24-0306CFLNUHP-01		
Product Item #:	Detail	Single Unit Price:	Qty.	Totals
HeloPod 16' T-MADS	3,770 Gallon Fluid Capacity - Dimensions: 8'-5" tall x 8' W x 16' L. Tank Depth 5'-5" (1) 4" Fill Port to connect to Fill Valve Hydrant - Supply (2) 4" Fill / Universal Ports w/ Butterfly Valve - Front (1) 4" FNH Universal Port w/ Butterfly Valve -Right Rear Utility Cabinet (7' Wide x 3' Tall x 2' Deep) to protect Fill Valve and Large enough storage to hold hundreds of Feet of 4" Hydrant Hose & 2 1/2" Hose or 3" Draft Pumps.	\$32,600.00	1	\$32,600.00
Quick Fill Valve Float Assembly within a Custom Stillwell	Custom 4" Quick Fill / High Flow 800 GPM Fill Valve with built in back flow preventer attached to Float level control assembly contained within a custom with heavy duty Aluminum Stillwell. Built in Air Gap. Connects to Hydrant and fill valve is activated manually.	\$8,450.00	1	\$8,450.00
LED Interior Tank and Exterior Lighting (Optional)	LED lighting Interior of the Tank one at each end. LED lighting illuminates the entire exterior of HeloPod. Includes 12V Battery with Conditioner / Trickle Charger to be connected to 110V Shore power. (If Shore Power is not available than a Solar Panel option can be explored.	\$3,995.00	1	\$3,995.00
Wrap & Decals	Standard Colors: Match Artwork from HeloPods: Design & Decals Applied by PumpPodUSA	\$1,900.00	1	\$1,900.00
Welded A-Frame	A-Frame for transport by Hook Truck (Stellar – Slider40)	\$1,100.00	1	\$1,100.00
Total Base Price	Base Price including Options	\$48,045.00		\$48,045.00
Optional Feature:	Remote Activation Kit: Fill Valve and LED Lighting	N/A	1	N/A
Combined Total:		\$52,008.71		\$48,045.00
Sales Tax:	State & Local Rate Combined Sales Tax: 94574	8.25%		\$3,963.71
Cost +Sales Tax:	Sub-Total Including Sales Tax:			\$52,008.71
Delivery/Training:	Transport /Delivery / Lodging / Training: Napa, CA			\$1,600.00
Merchant Card	Merchant Card Service Charge on \$	3.50%		
Grand Total:	Including Sales Tax			\$53,608.71
Checks payable to: PumpPodUSA 3850 Royal Ave., Suite B Cincinnati OH 45227		Installation Payments: 50% Payment with P.O. 50% Payment at Delivery		



Fire & Flood Emergency Services Ltd.

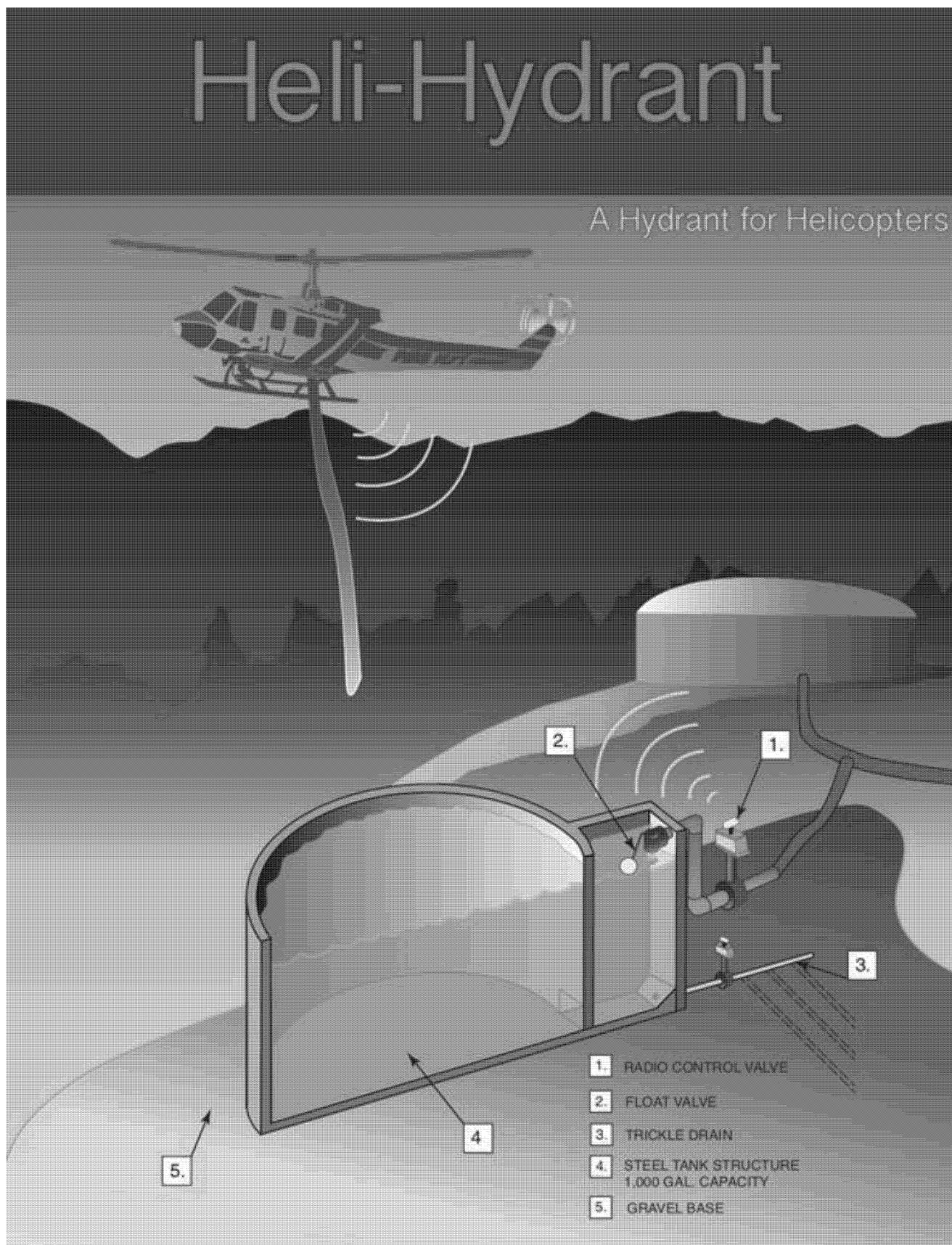
24Hr Dispatch: 1-833-611-3337
Admin: 403-341-3000
Mailing: Box 562
Red Deer, Alberta, Canada T4N 5G1

Canada

Pricing Summary

SUMMARY DESCRIPTION	RATE	UNIT OF MEASURE	SPECIAL INSTRUCTIONS
Refurbished Wheeled Mobile Support Tank	\$125,000USD+GST	Per Tank	-20,000 gallon Mobile Support Tank Open Top Helicopter dipping
New Build Mobile Wheeled Support Tanks	\$150,000USD+GST	Per Tank	-Depending on the accessories and build type
ADDITIONAL COSTS:			

2022 WILDLAND FIRE OPERATING PLAN



2022 WILDLAND FIRE OPERATING PLAN

APPENDIX G

Industrial Operations Fire Prevention Field Guide

<https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/osfm-website/what-we-do/community-wildfire-preparedness-and-mitigation/prevention-field-guides/fppguidepdf102.pdf>

This Guide contains standards and practices which have been found effective in preventing forest fires caused by various types of industrial operations when conducted on forest, grass or watershed lands. These standards and practices are based upon studies and the experience of fire agency and operating company personnel. The standards are to be considered as minimums and the various practices are offered as suggestions and examples of what has been tried and found successful in various situations. As industrial equipment and techniques change, the standards may need to change too. On-the-ground conditions may indicate the need for practices beyond the minimum legal requirements and will indicate which practices are most applicable in a given situation.

2022 WILDLAND FIRE OPERATING PLAN

APPENDIX H

Prioritization of Goals to accomplish/maintain

1. Defensible space clearing around all structures following the guidelines of Public Resource Code 4291 (Section VI, C, 5).
2. H₂S caches placed at identified gate locations (Section VI, C, 2)
3. Facility roof top numbers painted on the structures (Section VI, C, 6)
4. Standardized road signage to replace all existing versions following the guidelines of Public Resource Code 4290 (Section VI, C, 7).
5. Ingress and egress road infrastructure fuels reduction (Section VI, C, 9).
6. Installation of additional Fire Hydrant locations (Section VI, C, 4). Assess visibility of hydrant location markers for emergency personnel.
7. Pursue installation of five helicopter fill locations in the 4-5,000-gallon size.. (Section VI, C,8)
 - a. Potential alternatives:
 - i. Calpine/Geysers Power Company expansion of the LF-3 pond to support safe helicopter operations and engineered to accommodate sufficient water capacity.
 - ii. Install Heli-Hydrants (remote activated) ~\$55,000 + installation & water hook up / water tank (April 2024)
8. To establish an interoperability radio frequency for steam field operators and first responders to communicate on High Band, Low Band, 800mhz, VHF and UHF (Section V, I)
9. Increase water storage capabilities for firefighting use. One example of this is to establish a 1,000,000-gallon water storage tank in the southeast portion of the steam field on the NCPA development.

2022 WILDLAND FIRE OPERATING PLAN

APPENDIX I

THE GEYSERS - Safety Message

This Safety Message applies to all resources and locations in The Geysers

- ⇒ Operations will make every attempt to meet emergency vehicles at Security gates entrances and escort emergency vehicles to the incident scene.
- ⇒ There are repairs to facilities occurring on the property. Maintain distance from all facility equipment and piping.
- ⇒ The Geysers is a power distribution area; assume all power lines are energized. **DO NOT CUT ANY DOWN POWERLINES.**
- ⇒ Steep winding **UNMARKED** roads are throughout the Geysers. Drive defensively with headlights on anticipating the unexpected.
- ⇒ The Geysers area contain horizontal mines shafts. Stay away from mine openings.
- ⇒ Earthquakes are prevalent throughout the Geysers, **LOOK OUT** for rolling rocks and take earthquake precautions if earthquakes are felt.
- ⇒ Hydrogen Sulfide (H₂S) is a colorless, flammable, hazardous gas with a “rotten egg” smell. It occurs naturally in crude petroleum and natural gas and can be produced by the breakdown of organic matter and human/ animal wastes (e.g., sewage). It is heavier than air and can collect in low-lying and enclosed, poorly ventilated areas. **In case of emergency, egress uphill & upwind.**
- ⇒ Natural steam vents exist in many areas. **DO NOT** mistake steam for smoke you may be **BURNED**.
- ⇒ Reclaimed hydrants are painted **PURPLE** do not drink water from the hydrant system in the Geysers.
- ⇒ Stay upwind of cooling towers, the steam may contain hazardous materials. Use **DEFENSIVE** tactics on cooling tower fires.
- ⇒ Serpentine soil in the Geysers is known to contain Asbestos. **Avoid excessive dust and wear appropriate PPE.**

2022 WILDLAND FIRE OPERATING PLAN



**Open Mountain
Energy**



Calpine, NCPA, Mayacma Geothermal, Ormat

EMERGENCY PHONE CALL SCRIPT TO CAL FIRE

707-963-9636

1. Where is the Emergency located? (physical address) _____

Closest Power Plant Name _____

Closest Power Plant Number (#) _____

Closest Gate access to the Emergency (Cloverdale or Lake Co. – Socrates Mine/ Ridge Rd. /
Sawmill Rd. /High Valley Rd. / Cloverdale Geysers /other) _____

2. Name and contact # of the reporting person? _____

3. What is the nature of the Emergency? (fire-medical-hazard-etc.) _____

4. What is the number (#) of the closest LZ or Helipad location? _____

5. Will a representative meet units responding, where is the meeting location? _____

Mayacama Geothermal (Open Mtn Energy)

707 484-1489

Calpine Emergency #s

707-431-6008 / 707-431-6001 / 707-461-6911

Calpine Emergency Satellite phone

011-881-623-400-767

NCPA Emergency #s

707-987-3415 / 707-987-8610

Ormat

707-324-9963

2022 WILDLAND FIRE OPERATING PLAN

APPENDIX K

Calpine, NCPA, Mayacma, Ormat

Approximate Cost for some Goal items

- 1. Helicopter Dipping Tanks** –The tanks are apx 4,000 or more gallons each. They are self-filling. The price for these items continues to increase over the last few years. The prices are apx \$55,000.00 for a 4,000 gallon version and up to \$150,000.00 for a 20,000 gallon version. Any tank is find as long as it is hooked up to a pressurized water supply and is designed to always keep itself full.
- 2. Fuels reduction of Egress, Ingress and Infrastructure** – In the AOP there are primary egress and ingress routes identified that should have fuels reduced to allow safer travel during a wildland fire. Identified work is estimated at 40 days with a Type 1 excavator/masticator at 8 hours per day as a starting point towards this goal. The cost from estimates received is \$120,000.00.
- 3. Aircraft Hazard marking balls on suspended lines** – There are areas in The Geysers that are very hazardous to firefighting aircraft. The installation of aerial hazard marking balls would help identify those hazards. For quantity 30 of the marking balls that are 24 inches in diameter the cost estimate is \$32,880.00. That does not include installation.
- 4. Signage for all addresses, roads, facilities and fire hydrants** – First responders from outside of the area, guests and contractors in The Geysers are routinely lost because of deficient or nonexistent signage. The estimate to purchase the items to be installed is \$50,000.00. That does not include installation. This would include 64 road intersections, 45 addresses, 26 facilities, 30 helicopter landing zones, and 50 fire hydrants.
- 5. Other**
- 6. Other**