

# **AFTER ACTION REPORT**

## **Mobile Fire Suppressant Mixing Gel Plant**



**Noble Fire . Mendocino County**  
**September - October 2006**  
**Helicopter and Engine Support**

*Prepared By:*

**Gregg Smith, President/Owner**  
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## AFTER ACTION REPORT

### Noble Fire CA-MEU 007298

#### General Information

On September 25, 2006 at 1030 hours the California Department of Forestry & Fire Protection (CDF&FP) Mendocino Unit Command activated and deployed the All Terrain Water Corporation (ATWC) Portable Gel Suppressant Mixing Plant, Type 2 in support to air and ground operations for the 1,040 acre Noble Fire in the Red Mountain area. The Fire was within the CDF&FP Mendocino Ranger Unit. This is the third time that the ATWC Portable Thermo Gel Suppressant Mixing Plant was utilized in the field on a major fire in California. The ATWC Gel Plant was utilized on the 33,000 acre Canyon Fire in Stanislaus County, July 2006 and the 3500 acre Junction Fire in Trinity County, August 2006. On September 27, 2006 CDF&FP Command Team Three assumed command of the Noble Fire through October 3<sup>rd</sup>. The Noble Fire was in a remote area with extreme burning conditions and highly intense with century old timber stands and flash fuels. During the 2005 fire season, ATWC provided a Type 1 Gel Suppressant Mixing Plant from August through November at the Ukiah Air Attack Base supporting ST2 Air Tanker operations.

#### Gel Plant Operational Site Location



The Noble Command Incident Commander B/C Norm Brown and Air Attack Officer Kirk Van Patten (AA 110) requested that the Gel Plant be set-up at a location near the fire front travel path and along the Eel River 4 miles north in Cooks Valley. The ATWC Plant was set-up directly on the Mendocino- Humboldt County line.

The plant was supported by the Eel River for water supply. The location was suitable and absent of any aerial obstructions for helicopter operations. (N39.59.930 degrees by W123.46.934 degrees)

From September 25<sup>th</sup> through September 26<sup>th</sup>, The following Mendocino Unit Command staff coordinated with ATWC Gregg Smith during Initial attack operations.

Incident Commander: Norm Brown  
Deputy IC: Bob Rodilia  
Air Operations Branch Director: Kirk Van Patton  
Helicopter Coordinator: Jim Smith

From September 27<sup>th</sup>, through September 30<sup>th</sup>, The following Noble Command staff from CDF&FP Team Three coordinated with ATWC Gregg Smith during operations.

Operations Section Chief: Norm Brown  
Air Operations Branch Director: Paul McAfee  
Air Support Supervisor: Dan Reese & Scott Packwood (T)  
Helicopter Coordinator: Jim Smith & Randy Rapp  
Helibase Manager: Bob Farias  
Garberville Helibase Coordinators: Silvertip Helibase Support

### **Gel Plant Delivery**

ATWC Portable Gel Suppressant Mixing Plant (*ICS Mobile Fire Chemical Plant, Type 2*) went into full operations beginning at 1400 hours September 25<sup>th</sup> through September 29<sup>th</sup> at 1900 hours. The following overviews the delivery of mixed gallons.

<b>Date</b>	<b>Mixed Gallons</b>
9-25-06	10,300
9-26-06	20,800
9-27-06	33,200
9-28-06	7,200
9-29-06	<i>The plant continued to mix water with residual gel left in tanks from the previous daily operations up until 1900 hours when flight time terminated. ATWC Gel Plant provided 9,640 mixed gallons for air drops. Following flight time, 8000 gallons of mixed water/gel was transported by three ATWC Fire Tenders to incident branches and divisions for use in support of ground mop-up operations.</i>
<b>Totals:</b>	<b>71,500</b>

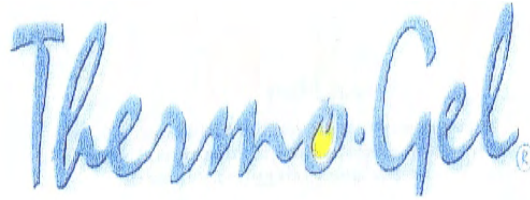
**NOTE:** *The Air Operations Branch has identified that when utilizing Thermo Gel it takes five bucket drops of water to equal one gel drop in suppressing fire activity. (5 to 1)*

### **All Terrain Water Corporation (ATWC) Personnel**

ATWC Portable Gel Suppressant Mixing Plant was staffed by the following ATWC personnel throughout field operations. Gregg Smith and George Hall. During initial set-up Charlie Kelly and Mac Morris.

## **Northtree Fire International (NFI) Personnel**

During deployment of the Mobile Gel Plant the following NFI personnel were present for tactical support as the state Thermo Gel product distributor. Chief Ed Waggoner was present during operations of the Gel Plant.



## **Thermo Gel Product Representative**

Steve Simmons from Thermo Technologies was present throughout the operations and available to the Command Staff and the Air Operations Branch staff for technical support. Thermo Gel Current Qualified Product List and Material Safety Data Sheet were provided to the Air Operations Branch Staff.

## **Gel Plant Mixing Percentages**

Throughout field operations, mixing operations was first set at 1.3 percent then decreased to 1% percent then upwards in stages of 1.2 to 1.3 percent. Following the various levels of delivery the Helicopter Coordinator and Gregg Smith agreed that 1.3 percent was best to combat timber crowning fire ground activity. Additionally, the helicopter pilots and ground forces provided the information to determine the proper mix ratio to suppress fire activities. The Eel River water was directly being pumped into the mixing plant without prior water testing which required compensating mixture ratios. After several ratio adjustments and eye witness accounts from the Helicopter personnel, the ratio was continually adjusted with various percentage mixtures as fire activity warranted. .

## **Gel Dye Color**

On this incident food grade color dye was not added to the mixed gel. However, upon requesting incident helicopter pilot evaluations, several stated that color would help them identify previous drop patrons. They also did state that Thermo Gel's white-clear appearance did help too.

## Ground Application for Direct Attack and Fire Line Mop-Up

On September 29<sup>th</sup>, following air operations, ATWC transferred 8000 gallons of approximately .02% to .05% mixed Thermo Gel into ATWC #8892, ATWC #8893 and ATWC #8891 tactical fire tenders (*ICS Mobile Fire Chemical Plant, Type 3*). The 8000 gallons was transported to the fire line and utilized in mop-up operations. The mixed Thermo Gel was transferred to several fold-a-tanks and collar tanks along two divisions and CDF&FP Engines supporting line operations. Two ATWC Tactical Tenders use their CAFS systems to apply Thermo Gel through overhead monitors broadcasting 200 feet inside the fire line. Field observations indicated the application suppressed hot spots and terminated ground heat.



## Incident Gel Plant Evaluation

Emergency Vendor Use Evaluation ICS 230							
Incident Name <i>Mobel</i>	Order Number <i>(AMEU 7298)</i>	Responsible Unit <i>Mendocino</i>	Start Date <i>9/25</i> To End Date <i>9/29</i>				
Location <i>Garberville</i>	Size/Scope <i>1000 acres / Timber Major</i>	Fuel Types/Risk Types <i>Fuel 10.</i>					
Vendor name <i>All Terrain Water</i>	Address <i>881 Riverside Dr. Ukiah CA. 95422</i>	Phone/Contact <i>707-463-3947</i>					
Service <i>Gel</i>	Commodity	Rental Equipment <i>Gel Plant + WT.</i>					
Brief description of services rendered:							
<i>Gel plant set up. Gel mixed for use of helicopter bucket work.</i>							
RATING FACTOR				Poor	Avg	Good	Excel
1) Vendor gave an acceptable ETA and met that commitment.							X
2) Vendor arrived ready to work. (water in tenders; bladder bags; with food; with paper and supplies, etc.)							X
3) Vendor met the appropriate supervisor for direction and complied.							X
4) Vendor maintained the expected/needed hours of operation.							X
5) Vendor met the operational expectations as stated by supervisor. (Produced IAPs, meals, etc. on time and to specifications)							X
6) Vendor equipment was in good working condition.							X
7) Vendor representatives cooperative and on site as needed. (equipment clean and serviced so that no unnecessary down time experienced.)							X
8) Vendor was responsible + reasonable to accommodate fire suppression economically.							X
9)							
Comments:							
<i>Greg + Company have been responsible + accountable to be available at all handovers + set up for all missions. Pilots all gave good feedback about the vendor + his equipment. Pilots all stated Gel worked great.</i>							
Vendor Representative Name/Title <i>Gregory H. Smith</i>		Date <i>9/30/06</i>	Government Representative Name/Position <i>Dan Pearson / ASGS</i>		Date <i>9/21/06</i>		
Signature <i>Gregory H. Smith</i>			Signature <i>Dan Pearson</i>				

# Helicopter Pilot Evaluations

## California Department of Forestry and Fire Protection WATER ENHANCING FIRE SUPPRESSANT CHEMICAL EFFECTIVENESS EVALUATION

(Click on shaded boxes for pull-down menu choices.)

Incident Number:	Fire Name: <i>Noble Fire</i>	Date: <i>9/29/06</i>	
ATGS Name:	Reporting Airbase:	Time: <i>0930</i>	
Air Tanker #s: <i>45917</i>	Gel Origination Base:	Gel Type: <i>Thermo</i>	
Conditions on Arrival:			
Ground Unit at Scene Name/Number:			
Check the appropriate boxes			
Drop Location	Fuel Type	Fire Danger	Fire Size
<input type="checkbox"/> Spot <input checked="" type="checkbox"/> Head <input checked="" type="checkbox"/> Right Flank <input checked="" type="checkbox"/> Left Flank <input checked="" type="checkbox"/> Heel	<input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Brush <input checked="" type="checkbox"/> Timber <input checked="" type="checkbox"/> Slash	<input type="checkbox"/> Moderate <input type="checkbox"/> High <input checked="" type="checkbox"/> Very High <input type="checkbox"/> Extreme	<input type="checkbox"/> 0 to 1 Acre <input type="checkbox"/> 1 to 5 Acres <input type="checkbox"/> 5 to 10 Acres <input checked="" type="checkbox"/> 10 + Acres
Aspect	Drop Strategy	Fire Type	Wind
<input checked="" type="checkbox"/> North <input checked="" type="checkbox"/> South <input checked="" type="checkbox"/> East <input checked="" type="checkbox"/> West	<input checked="" type="checkbox"/> Cool <input checked="" type="checkbox"/> Direct <input type="checkbox"/> Parallel <input type="checkbox"/> Indirect	<input type="checkbox"/> Ground <input checked="" type="checkbox"/> Intermediate <input type="checkbox"/> Crown	<input checked="" type="checkbox"/> Headwind <input checked="" type="checkbox"/> Tailwind <input checked="" type="checkbox"/> Crosswind
Drop Terrain	Gel Visibility	Ground Coverage	
<input type="checkbox"/> Flat <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Steep	<input type="checkbox"/> Acceptable <input checked="" type="checkbox"/> Marginal <input type="checkbox"/> Unacceptable	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
Drop Purpose Accomplished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Marginal		
Did Fire Escape IA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Comments:			

**California Department of Forestry and Fire Protection  
WATER ENHANCING FIRE SUPPRESSANT CHEMICAL  
EFFECTIVENESS EVALUATION**

(Click on shaded boxes for pull-down menu choices.)

Incident Number:	Fire Name: <i>NOBLE FIRE</i>	Date: <i>9/29/06</i>	
ATGS Name:	Reporting Airbase:	Time: <i>0930</i>	
Air Tanker #s: <i>45917</i>	Gel Origination Base:	Gel Type: <i>THALMO</i>	
Conditions on Arrival:			
Ground Unit at Scene Name/Number:			
Check the appropriate boxes			
Drop Location	Fuel Type	Fire Danger	Fire Size
<input checked="" type="checkbox"/> Spot <input checked="" type="checkbox"/> Head <input checked="" type="checkbox"/> Right Flank <input checked="" type="checkbox"/> Left Flank <input checked="" type="checkbox"/> Heel	<input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Brush <input checked="" type="checkbox"/> Timber <input type="checkbox"/> Slash	<input type="checkbox"/> Moderate <input type="checkbox"/> High <input checked="" type="checkbox"/> Very High <input type="checkbox"/> Extreme	<input type="checkbox"/> 0 to 1 Acre <input type="checkbox"/> 1 to 5 Acres <input type="checkbox"/> 5 to 10 Acres <input checked="" type="checkbox"/> 10 + Acres
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Drop Purpose Accomplished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Marginal		
Did Fire Escape IA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Comments: <i>AREA OF GEL DROP NO FIRE NEXT AM.</i>			







