

Appendix F
Fire Stop Personnel
Burn Evaluations



EVALUATIONS MADE BY PERSONNEL

Key Fire Stop personnel were interviewed onsite during the mop-up of the burn to get their assessment of the prescribed burn operation. Most personnel were asked how routine/not routine the preparation, active ignition, and mop-up phases of the burn were and their responses were digitally recorded. The recorded responses to each of the three questions were then transcribed from DVD and have been provided in this section. It should be noted that portions of the interview were inaudible on the digital recording and could not be transcribed.

BURN BOSS

Site Preparation

“We’ve been at the preparation for a couple years and a lot was routine. The things that are non-routine are the unexploded ordnance, which limits access, causes a threat to personnel working close by, [and] possibility of problems with aircraft. Lessons learned would probably be looking at more preparation on the line construction.”

Active Ignition

“For a helitorch burn, things were pretty routine. Again, access was limited because of the unexploded ordnance, which curtailed correct suppression activities on the ground. [We were] limited to suppress[ion] by air. But this, we planned for this contingency and we were able to control, contain the escape we had, and it was within the perimeters of the military area. Lessons learned, we found that we had planned for the right amount of suppression equipment to handle the job.”

Mop-Up

“Things are pretty well routine. Again, the limit by the ground forces to full access puts the bulk of the work on the mop-up on the aircraft. This causes a delay in the total mop-up procedure because the expected wait to mop something up is with ground equipment and troops actually working on the area. So this was pretty expected. We’re just continuing to work at it.”

FIRE STOP PROJECT MANAGER

Site Preparation

“Everything was far from routine in the pre-plan stage. We had approximately 3½ years involved in this project before ever lighting anything. There [were] numerous considerations made because the ordnance and the various requirements in (inaudible) to get a good burn that the ordnance can be spotted (inaudible) while being able to protect the (inaudible). The planning was extensive. We assembled a team that was second to none and it was an exceptional project. Extraordinary. The perimeters of the burn [site were surrounded by a 1,701-ft exclusion zone]. Because of wildlife considerations, the areas around the perimeter could not be extensively cleared off. So the protection around the perimeter was [limited]. [We] thread[ed] the needle, so to speak, on the weather prescription, trying to get [an] offshore wind. We had live fuel that was at an approximately level because we had very little dead fuel underneath it. We looked for a weather prescription that doesn’t occur too often. And we had to be ready to mobilize our forces in a very short time, do our best to secure the perimeter, and ignite. And we assembled an exceptional team, and a lot of equipment, a lot more equipment, a lot more pre-planning went into [this burn], I believe, [than] any [other] burn of this size.”

Active Ignition

“No portion of it [the burn] was really totally routine, but it was going quite well until we had one area jump the lines and things got (inaudible) towards the west was occurring (inaudible). There had been a lot of clearing work in setting up (inaudible) prior to this. We learned we were able to depend on the mutual aid systems, media, OMC fire, [and] we could rapidly count on them for mobilization even during a period that had potential winds, times that were tough (inaudible). Nothing went beyond the borders, we had helicopters (inaudible), our fire strike teams, our tenders, our dozers were able to secure the lines, and currently we’re working in the mop-up stage.”

Mop-Up

“Again, there’s nothing routine in dealing with the ordnance and the potential for it to carry things. We are very happy the operation’s been conducted safely, no one’s been injured, we’re very proud of that. This operation is totally being conducted for public safety and what we’re getting is not only an area that’s cleared off[but will] hopefully....be safer for the ordnance team (inaudible). Now we can’t let ground forces out to where we’d like to get them out, it’s not routine. Normally, we’d work the soil, (inaudible), there’s numerous hot spots along the perimeter, we have to be sure they’re out, not just from the standpoint of removing the hot spot for a potential burn, but also from the ordnance, detonating these ordnance. So you can’t put people in there, you have to worry about it blowing something over the line, so we have to go to extensive lengths to secure the lines. And get every hot spot out. It’s very time consuming and expensive deal. We’ve learned a lot of lessons: you can’t over plan for any occasion. You have to do what’s reasonable and prudent and proper. The Army contractor’s [is] totally cooperative. We’ve assembled more forces, more equipment and [have done] more planning than we ever have to burn 500 acres anywhere else. And we were able to catch the [fire outside Ranges 43–48.”

FIRE BEHAVIOR ANALYST

Site Preparation

“It was certainly very much non-routine. We had the hazard of unexploded ordnance and that greatly constrained the options we had for preparing control lines, very much limited to tools we normally use and left us with relatively few options on ways to develop sufficiently dividing control lines. And I guess the lesson learned is we need to think hard about ways to develop effective control lines with new tools and techniques and parameters for guiding to develop those control lines.”

Active Ignition

“That too was non-routine. Certainly you had ordnance exploding, which is very non-routine, [and] may have contributed to some spotting hazard, but it required a great stand-off distance, which was non-routine and normal control efforts to spot the spots and so on were not permitted. And the fire did escape, which is non-routine. And even though it did escape, it gave us an opportunity to learn some things. Direct examination of the evidence of spotting, examination of the way in which the fire breached the control line, and by looking at the fire behavior of the escape fire subsequent to its escape, all contributed good information to improving our ability to predict fire behavior, under these circumstances.”

Mop-Up

“Just as the other two phases, the mop up was very non-routine. The main thing is, once again, the presence of these exploded ordnance really constrained the tools and methods you can employ during the mop-up phases and that meant we needed to have a much greater reliance on aircraft and we really couldn't use ground resources nearly as effective[ly] as we would like. And that simply meant less complete mop-up, greater hazard of flare-ups and escapes the next day. That certainly was anticipated but can best be counted as non-routine aspect of this operation, and perhaps we can think of ways for more effectiveness in mop-up stages.”

FIRE STOP SAFETY OFFICER

Site Preparation

“It was not routine in the length of time it took and the number of people we had to deal with. The procedure [itself] was routine.”

Active Ignition

“Lighting the test fire was pretty routine. We learned some lessons right away that the wind shear wasn’t high enough, it was shearing off at a lower elevation than we needed, it was steering the spot fire (inaudible).”

Mop-Up

“Never routine. When you’ve got routine, you can put troops in, you can start mopping up 50 ft, 100 ft, 200 ft in. You can’t do that with your troops though, you’ve get helicopters dropping over and over, but there’s still no insurance that duff, if you want to call it, is out. The infrared ships will show red forever, I think. Lessons learned totally, we can probably still do this safely, just every little bit experience we get in this type of burn will help us do one in the future.”

OPERATIONS CHIEF

Site Preparation

“Pre-burn preparation was fairly routine, although we did have limitations on where we could go and not go because of ordnance.”

Active Ignition

“This particular project for this prescribed burn, from my past experience, was not routine. Again, that has to do with the limitations on the area you can get into. You have to stay within 1,700 ft from the holding personnel, which makes it very difficult if we have any fire cross the control lines—we cannot utilize the holding personnel to go right in and knock it down. So that definitely makes it a not very routine operation.”

Mop-Up

“Once again, this is not a routine situation because of the ordnance that [is] in there, the crews cannot get in on the fire’s edge and mop it up. We have been utilizing some Parsons employees to go in and clear areas prior to our crews being able to go in and mop it up. Like I said, this is not a real routine situation, as far a firefighter would do with a natural prescribed burn or a wildfire.”

PLANNING SECTION CHIEF

Site Preparation

“I honestly believe after reviewing the pre-burn plan, the incident action plan that I helped put together, and interviewing my team members (inaudible), I believe the pre-plan stuff was pretty routine. There was nothing really out of the ordinary, at least from my perspective, that we could learn any lessons from. I think that part was done quite well.”

Active Ignition

“Well, obviously we had hoped to keep the fire within the project perimeters, and obviously that didn’t happen. So it was not routine certainly. But I think it’s important to note that we did have a plan, a contingency plan for that, and I think we activated that contingency plan appropriately and we were able to keep the fire within the perimeter of the base, and we had no injuries. I believe that if we have this to do over again, I think we can learn from that, I think that no one, even though we were trained and told about it, I don’t think anyone could imagine the impact of some of those rounds and some of those un-spread ammunition going on out there, but we do know because we’ve gone through it. I think that’s an important lesson that if we come back here again to do it again, we use as much as possible the same people that experienced that—the ordnance going off and the roads and the conditions—so that we have experienced people doing it and we won’t have to continue to retrain them because they’ve gone through it—they’ve lived it. So that would be one big lesson. The other lesson learned was that even though you make the best plans—this has got years of planning into it—things sometimes go astray and we’ve learned that because we were flexible, because we could stop and regroup, we were able, because we’ve functioned now as a team for many years, we were able to do that. And I think our lesson is to try to keep the same team together and intact because of our ability to work with each other. I think that’s very important when we do this again, at least on a burn with a lot of ordnance such as this one.”

Mop-Up

“Well, in terms of routine, when you’re dealing with ordnance and mop-ups, I’ve learned that there are some things that are out of the routine. If you compare what we’re doing here with a normal, normal project-type burn, a normal project-type burn you do not have live ordnance; therefore, nothing can be routine to compare to. But, in other words, if we have a spot fire on a regular control burn, you can jump on it, you get down into the brush, and you put it out, and you use your hand tools, you squirt water on it and can get it out. Here if you do that, you may [have] a round go off. So we’re restricted from doing that [firefighting from the ground]. And I’ve learned, and that’s contrary to my 35 years’ experience of fighting fires. So I’ve learned with ordnance you’ve got to take a different [tactic], and I never realized, I’ve never been through this before, and that was a very big lesson, that you need to rethink your entire experience and apply that with live ordnance out there when you’re trying to pick up these spot fires. So I do believe that’s a big lesson.”

FIRE WEATHER METEOROLOGIST

Site Preparation

“Pre-Burn preparation, as far as that’s concerned, was the forecasting—making sure that the day for the burn met our weather prescription, as well as talking to the Air Resources Board, as well as the Army; making sure everyone understood what the weather would be for Friday, the burn day, as well as the weather leading up to it and weather following it; [and] making sure that the prescription and fire would be doing what we expected for that weather prescription.

As far as what was expected, it was routine. We got a no-burn designation from the California Air Resources Board and that was kind of expected. There was argument or disagreement as far as mixing heights and what mixing heights were acceptable. From there, we went to discussions with the Army. From there, [we had] several meetings afterwards. But that was kind of expected. It was nothing unusual there. I knew that there would be some discrepancy and actual subjectivity as far as forecasting. And we discussed that, and the forecast turned out to be what Wendell Ness (NPS weather consultant) [thought], as opposed to what [the] Air Resources Board had thought it would be.”

Active Ignition

“For a prescribed burn, it went relatively well. And the active burn was progressing quite well. The smoke was lofting just as we thought and staying up in layers and staying above the population. Until the breakout of the burn from the prescribed, it went rather well.”

Mop-Up

“Also with a prescribed burn, wildfire, when you’re doing the mop-up operations, they’re doing burning out activities today, and from there we’ll continue to do mop-up operations. Everything’s pretty routine. The weather is conducive for what they’re doing and I’ve been discussing it with the burn teams, so they know when the winds are going to change, and when temperature’s going to change, humidity. What they’re going to be doing, so they can plan their activities based on the weather patterns.”

AERIAL IGNITION SPECIALIST/AIR ATTACK SUPERVISOR

Site Preparation

“Preparations, it was all routine.”

Active Ignition

“It was not routine, and probably some of the lessons that were learned is [that] a burn of this complexity, with [the] inability to have ground forces on the ground to assist you, we probably need a little better block layout with respect to the wind that we have to burn with the smoke conditions. Block layout means the area we’re going to burn has to be kind of lined up with the wind that’s predicted on the site to keep the smoke blowing where they wanted it out to sea and not bothering people. In other words, that has to be lined up with the prescription. The block was burnable in that manner but we had just a slight (inaudible), but without people on the ground it was a good lesson to learn that we need to make sure that everything is prepared, so there won’t be problems with not having people on the ground.”

Mop-Up

“It’s not routine for normal mop-up. Some of the lessons are [that] we’re back to the constraints because of it being such a special burn, and it has to be totally mopped-up from the air. Mop-up from the air is quite routine for a large fire, but there’s still other people [that] can go in and deal with things. Here, it is simply air to just keep dropping water until you have it mopped-up and not too much. I can’t say too much about the lessons learned from it, it’s just the fact we have to do it and so I guess we’re kind of in between that—routine and not routine.”

LOGISTICS SECTION CHIEF

Site Preparation

“Everything was routine, everything went as planned. We had the proper amount of days to prepare and we learned [that] with any new project, especially the difficult projects that [have] never been accomplished before by any prescribed burn company, that there are curves thrown at you, and we have the personnel with the experience level that deal with those problems and we had no problems dealing with any of the curves thrown at us and so that’s not only routine, it was a job well done.”

Active Ignition

“They were—the first portion—very routine, going exactly like we had planned. [We were] starting to get more heat, building up heat, starting to get lift. Then we had some problems and those problems are being investigated. Basically, we had an escape on the west side, and with that, we had fire running out into areas that were not part of the burn—but they happened to be part of the secondary containment area. That’s still inside of our contingency plans. And that is routine. Something that we knew could happen, that did happen, and we had the resources either in our initial plan or in our contingency plan to cover that. And the fuel breaks/fire breaks in the secondary areas stopped the run.”

Mop-Up

“Everything is routine. We’re accomplishing the objectives, which is what we were hired here for. And, at the same time we’re preventing the fire from expanding out any further than it has, so we’re handling many different tasks all at the same time, and any type of fire, any type of prescribed burn is hectic and that is routine. And you have to be able to dodge the bullets and we’ve been doing so.”

AVIATION PROJECT MANAGER

Site Preparation

“For a prescribed burn it was not routine. It required a tremendous amount of pre-work and coordination with the local agencies, FAA, Air Force, for clearances as well as TFRs and support bases for the operation because we had a heavy emphasis on the suppression operation to maintain control and as well as the single engine air tankers, dropping retardant in preparation for the ignition, because we couldn’t go direct and burn out as we normally would. So, you worked more than the typical burn due to the fact the operation’s going to be conducted and supported simply by air.”

Active Ignition

“It was not routine for the same reasons, because we are dealing with a large [number of] unexploded ordnance. It was not routine in the fact we could not have people even in close proximity to the burn operations, it was all going to be conducted with people a long ways away, unable to pick up any spots on the line, and any spots had to be dealt with simply by aviation resources again. Also, normal fire prescriptions would not require you to have the fuels being burnt at the worst possible opportunity with the (inaudible) moisture levels as low as they were, because one and ten hour fuel moistures were (inaudible) as well as live. And you had the worst possible weather conditions, a basically east wind with low humidity and high temperatures. So the prescription was a very touchy prescription and required a lot of aviation support. Unfortunately, with the winds that [were] required for the mixing and carrying the smoke out over the ocean, those same winds also precluded us from aggressive aerial attack on the spot fire. We just could not get the resources in to do the drops, make the drops effective. The high winds, the drop elevations, by the time the water got to the ground, it was essentially ineffective with those high wind speeds and the drop height itself. Also, we would normally, on a normal burn, you would not have the need for helicopter coordinators, air attack or anything else. On a wildfire you would. We approached this from a prescribed burn perspective with a large holding contingency. Once it got out, we had to expand our TFR, ask for additional coordination from the air, and do a lot of other things we normally would not do until you got into an escape situation.”

Mop-Up

“Well, there again, no it’s not routine, only because we have to do, most of the mop-up operation is being done by air again. And it would be easy with brush and the oaks, the canopy and what have you. Our retardant drops are not as effective as they would be in a higher fuel model with the canopy we have down here. Even the high concentration drops we’re putting on, we have a heck of a penetration problem because of the fire dependent fuel species that we’re burning. And the fact we can’t take advantage, there again we have a 100[-ft] buffer, a safety buffer around it, we can’t make direct attack with a bucket or aircraft next to a crew. Typically you would have a crew working a hot spot and they would back away and turn it over and have an aircraft go out (inaudible). Everything get[s] turned over and what have you. We’re basically raising the humidity instead of actually putting the fire out.”

SITUATION UNIT LEADER

Site Preparation

“Well routine means what you’re used to and what you’re not. Most all of my experience has been with wildland fires, not prescribed fires, so this has been non-routine in that I have had so much time to get materials together, prepare myself with both the digital imagery as far as (inaudible) plots, all of that information ahead of time. So that’s been a little non-routine, and very beneficial, saves a lot more time. Know the country, know the fuels, prepare myself for the burn itself. It’s been really nice. As far as lessons learned, in that category I suppose there isn’t too much I would change. Of course there’s always nicer cameras, nicer stuff you can do along that line, as far as digital imagery, as far as GIS type players I use. I’m real satisfied with that. Probably not too much that I would change. Perhaps being with the pilot a little bit more prior to the day we actually burn would be a little helpful, but that wasn’t a major issue. So I was pretty happy with the pre-burn.”

Active Ignition

“Well, there again, what’s routine for me is wildland fire. And actually the actual activity of being there during the ongoing fire, that was of course routine, but not having all the aircraft in one place, and everything happening at once of course was non-routine. That’s very different from what...and how the infrared shift, which was my activity during the active burning part of that, was running, being involved with the infrared camera during that time. How we interface with the operational people during that time, I’m still a little unclear as to how we can improve that. Obviously, since we had an escape on this one, it didn’t work out as planned, and I don’t really know how we could’ve done that better as far as dealing with that escape. I think obviously the infrared camera I have is not used to viewing from such a high distance. We had to stay, of course, above where the ignition ships were and where the suppression drops were, and they were all at a lower elevation down near the ground. And that’s where I’m used to working. The camera, the infrared cameras is designed, it does its best work at about 300-400 ft off the ground. I was at 1,500 ft, so I was just picking up just the larger heat sources and whatnot, not the details I’m used to. Still it worked well. Prior to the escape, we found two spots and told the people where they were and what was going on. Those two spots by the way stayed in the retardant area, never did escape. They’re still there now. They just went out on their own, but of course the problem for the operational people is they couldn’t get under the smoke and deal with those anyway. So the communications with the ignition boss and the suppression people was good. It’s just they couldn’t put it into effect because of the smoke. So it’s, I think we’re going to probably hash that over some more, but right now, today I can’t come up with how we’re going to probably run that better. We need to figure out some way to get the infrareds probably a little closer to the ground or have a better camera with a higher [resolution] that you can use at a higher elevation. Those would be the only two choices there. . And how to put that into effect for the operational people. Plenty of room for improvement there, I’m just not sure what that is right now.”

Mop-Up

“This is very routine now. Once you’ve gotten into the mop-up stages, very much like a wildland fire as far as the information they need from the infrared ship and how that’s presented in maps and real time when you’re out there. It’s just like a regular wildland, very comfortable, very easy to interface with the people. There’s still a lot of ships in a small area, but that hasn’t

been a problem. It's not that much different from a regular wildland, it has a lot of ships also. So this has been very satisfactory actually. Mop-up stage has worked well. Feel like there's a lot of good communication working out in the field with the different ships has worked well, and what I'm used to."