EXHIBIT 15

TO

MEMORANDUM IN SUPPORT OF MOTION IN LIMINE TO ESTABLISH THE UNITED STATES' LEGAL ENTITLEMENT TO A FEDERAL RESERVED WATER RIGHT AND TO LIMIT THE SCOPE OF EVIDENCE NECESSARY AT TRIAL

Civil No. 05-cv-49053

HISTORIC BUILDING INVENTORY AND EVALUATION

AIR FORCE PLANT 42
PALMDALE, CALIFORNIA

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ABSTRACT

A historic building inventory and evaluation was conducted at Air Force Plant (AFP) 42 in Palmdale, California, with on-site surveys being conducted on 28 August - 1 September 1995 and 7-17 October 1996. The purpose of this study was to provide the information necessary to develop determinations of eligibility for potentially significant historic buildings and structures.

Field survey and background research resulted in the identification of one permanent, World War II-era historic building, Building 531, as possessing integrity of location, design, setting, materials, workmanship, feeling, and association. Additionally, Building 531 was directly associated with the wartime operations of the 412th Fighter Group, the first American, jet-equipped fighter group. Building 531 is, therefore, eligible under Criterion A for its integrity and its direct association with events that have made a significant contribution to the broad patterns of American history.

The field survey and background research of readily available data also resulted in the identification of two Cold War-era buildings that meet the requirements of Criterion Consideration G for buildings less than 50 years old. Building 150 is the final assembly building for all of the space shuttles manufactured by the United States. Building 210 is the final assembly building for all the SR-71 Blackbird strategic reconnaissance aircraft built by the United States. The Space Shuttle and SR-71 Blackbird programs are considered *exceptionally important* to the successful conclusion of the Cold War. These Cold War-era buildings retain a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association, and are, therefore, considered eligible for listing in the National Register of Historic Places under Criterion A for their associations with these critical Cold War-era programs. No historic district was identified at AFP 42.

This determination is considered preliminary until concurrence is received from the California State Historic Preservation Officer. Additionally, the identification process in terms of archaeological resources and Native American concerns is being conducted concurrently as a separate study under this contract. A Cultural Resources Management Plan is also being developed as a separate deliverable under this contract.

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Following stalled arms control negotiations in Reagan's early years, talks resumed in his second term. Reagan's November 1985 summit with Gorbachev accomplished little for immediate arms control; however, it signaled the resumption of summitry, a popular move with the American public, and a tentative step toward the resolution of the Cold War.

3.3.5 The End of the Cold War: 1989-1991

In January 1989, the American position on the ending of the Cold War was still one of caution, with National Security Adviser, Brent Scowcroft, stressing, "The Cold War is not over" (Walker 1993:310). During summer and fall 1989, however, events in Eastern Europe demonstrated the change in Soviet foreign policy with far more clarity than any announcement by Gorbachev. Free elections held in Poland on 4 June 1989, the first in a generation, resulted in a triumph for Solidarity and a defeat for Polish communists. Additional change quickly followed, with communist governments in Hungary, East Germany, and Czechoslovakia being peacefully replaced with popular governments in which communists were minority members. Presented with ample opportunity to intervene, the Soviet Union allowed the people of Eastern Europe to express their choice, even though that choice was undoubtedly painful to the Soviet government. By the Malta Summit of 3 December 1989, between President George Bush and Gorbachev, there was public acknowledgment by both the Soviet Union and the United States that the Cold War was over. The opening of the Berlin Wall almost 1 month earlier, on 9 November 1989, was a dramatic symbol of the resolution.

In November 1990, the United States and the Soviet Union concluded the Treaty on Conventional Forces in Europe. On 1 July 1991, the Soviet Union announced the dissolution of the Warsaw Pact, and on 6 September 1991, recognized the independence of the Baltic Republics. On 17 September 1991, President Bush ordered the SAC Alert Force to stand down, a task that was completed at 2:59 p.m. on 18 September 1991 (U.S. Air Force 1991:48-50).

On 16 December 1991, Gorbachev announced that the Soviet Union would be dissolved and that the Commonwealth of Independent States would be its constitutional heir. By 31 December 1991, the Soviet Union had ceased to exist as an independent nation.

3.4 A HISTORY OF AIR FORCE PLANT 42

As shown in Photograph 3-1 (located at the end of this chapter), the Palmdale Airport was used by Army aviation units as early as January 1935. The airport served as a bivouac site for squadrons, such as the 95th Pursuit Squadron, March Field, Riverside, California, that were training at nearby Muroc Dry Lake (now Rogers Dry Lake, Edwards AFB). The airport itself

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was little more than a level field cleared of vegetation and flanked by a small collection of buildings that served as a rudimentary aerodrome. Transient military squadrons were housed in tents pitched nearby, and their aircraft were parked near the airport buildings. In 1940, the Works Progress Administration (WPA) built a concrete runway for use by the USAAC.

The Palmdale Airport was taken over by the Army during World War II and renamed Palmdale Army Airfield (AAF). Numerous additional facilities were constructed, including a number of buildings and structures on the field and a housing area south of the field. By mid-1944, the airfield consisted of three runways, a number of associated taxiways and parking aprons, a prefabricated metal hangar, a control tower, a fire station, a Link trainer building, a school building, an operations building, and a bomb storage area (Figure 3-1). The cantonment area was not located on the field; rather, it was located south of the field, northeast of the intersection of Avenue Q and Twentieth Street East in Palmdale and consisted of a Base Headquarters, a service club, a mess hall, four officers' barracks, three officers' latrines, a Quartermaster building, a theater, a water tower, a chlorinator building, nine enlisted men's barracks, four enlisted men's latrines, a guard barracks, a dispensary, and a guard hut. With the exception of the metal hangar, all buildings appear to have been of the wood-frame, temporary, mobilization-era architectural style, which was typical at training cantonments throughout the United States.

When the war ended in 1945, the field was declared surplus by the Army and purchased by Los Angeles County for use as an airport. It then comprised an area of 951 acres that included three concrete runways. The Los Angeles County Airport at Palmdale exclusively served the local community until it was found to be the most suitable location for a flight testing and final assembly facility (Williams 1958). The off-base cantonment area was also surplussed by the Army following the end of the war. A windshield survey of the area revealed that no structures from the cantonment area appear to have survived to the present day.

3.4.1 Palmdale Army Air Field During World War II

A one-page memorandum from Headquarters, Fourth Air Force, San Francisco, California, dated 13 December 1942, authorized the Commanding Officer, Army Air Base (AAB), Muroc, California, to form base detachments to be assigned at Bishop, California, and Palmdale, California (USAAF, HQ Fourth AF, 13 December 1942). These base detachments were created for the operation of satellite aerodromes, to be operated under the direction of AAB Muroc (later Muroc AAF, now Edwards AFB). Later records for Palmdale AAF, from early 1944, indicate that the field was operated by a detachment of the 323rd Headquarters and Army Air Base Squadron (HQ & AB SQ) from nearby AAB Muroc from at least April 1943 until March 1944. The strength of the 323rd HQ & AB SQ detachment assigned to Palmdale

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AAF was comprised of 50 to 100 military personnel, with the strength varying monthly.

During the majority of 1943 and early 1944, the airfield apparently served as a training base for a number of squadrons rotating through the area, many of which were training at the bombing and gunnery ranges located at AAB Muroc. Between April 1943 and March 1944, the 11th Tow Target Squadron, 392nd Bombardment Squadron, 27th Bombardment Squadron, and the 436th Fighter Squadron rotated through Palmdale AAF. Additionally, numerous weather, guard, and communications detachments rotated through or were assigned to Palmdale AAF.

3.4.1.1 **412th Fighter Group**. The 412th Fighter Group (412 FG) was activated by command of Major General Lynd, Fourth Air Force, on 29 November 1943 and assigned to IV Fighter Command, Fourth Air Force (USAAF, HQ Fourth AF, 15 November 1943). The 412 FG had an authorized strength of 22 officers, 1 warrant officer, and 50 enlisted men, and was temporarily assigned to Flight Test Base, Muroc Reservation (now known as North Base, Edwards AFB) under the command of Captain Brunner R. Coke. Captain Coke was replaced by Major John W. Mitchell in December 1943, and Major Mitchell became Deputy Commanding Officer when Colonel Homer A. Boushey, Jr., assumed command of the group on 11 January 1944 (Photograph 3-2). Colonel Boushey commanded the 412 FG until after the end of World War II. During World War II, Flight Test Base was a top-secret flight test facility engaged in testing of highly classified military aircraft such as the first American jet-powered aircraft, the Bell XP-59A Airacomet, which made its maiden flight there on 1 October 1942 (Carpenter, 1992:31).

The next available data are in the form of eight progress reports and other memoranda generated by the 412 FG between 18 February 1944 and 26 January 1945 that provide some detail on 412 FG activities.

Beginning 1 February 1944, 412 FG personnel were involved in an accelerated service test of three Bell YP-59A Airacomet aircraft. These aircraft, preproduction models of the P-59A, were being subjected to a detailed flight test evaluation, the primary purpose of which was "to obtain 50 hours flying on each airplane in order to bring to light any inherent defects or malfunctions of the engine or airplane" (USAAF, 412 FG, 22 February 1944:1). A memorandum dated 18 February 1944 provides flight test information on cockpit arrangement, flying characteristics, combat ability, power plant, pressure cabin, emergency systems, and radio. The memorandum states, in part, "This airplane, while having fairly good speed, climb, and maneuvering characteristics at moderate altitudes, is entirely unsuited for combat. Its extremely high fuel consumption, short operational range, poor vision, unsatisfactory stability at high speeds, and lack of rugged construction, make it suited only as a "jet" training airplane." The

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report recommended that the aircraft was not suitable for combat and that only 100 P-59A aircraft be built and utilized for "jet training" (USAAF, 412 FG, 18 February 1944:1-4). A subsequent memorandum on the service testing of the YP-59A aircraft dated 19 February 1944 made additional observations and recommendations regarding the service suitability of the Bell Airacomet.

The accelerated service testing of the YP-59A aircraft was concluded on 20 February 1944. The summary report contained the following points [underline and quotation marks in original]:

> a) The YP-59A is <u>not</u> considered suitable for combat operations. It is the opinion of all personnel concerned that the P-59A-1 aircraft now in production should be utilized for training "jet" personnel.
>
> b) Both pilots and mechanics were enthusiastic about the present performance and future capabilities of "jet" engines. and
>
> c) Experienced combat pilots were completely "sold" on jet propulsion as a method for powering Fighter aircraft. With a suitable aircraft design, it is felt that outstanding performance can be achieved.

The 445th Fighter Squadron (445 FS), less personnel and equipment, was assigned to the 412 FG on 31 March 1944. Due to the small number of jet aircraft available at Flight Test Base (now known as North Base, Edwards AFB) and the long lead time required to train jet engine mechanics, it was recommended that assignments to the 445 FS be "made no more rapidly than the personnel can be assimilated (USAAF, 412 FG, 7 April 1944:3)." During the first half of 1944, the 412 FG continued to operate out of Flight Test Base, and continued to conduct flight tests of both XP-59A and YP-59A aircraft in anticipation of receiving production model P-59A aircraft. The next series of flight tests conducted by the 412 FG involved comparative performance evaluations between the YP-59A and conventional fighter aircraft. While the records are unclear, the group apparently assisted in testing the Airacomet against various conventionally powered fighter aircraft such as the Lockheed P-38 Lightning, the Bell P-39 Airacobra, the Curtiss P-40 Warhawk, the Republic P-47 Thunderbolt, and the North American Aviation P-51 Mustang. The results of these tests indicated that, while the Airacomet was competitive with conventionally powered aircraft, it did not outperform the most modern of the Army's fighters. Additionally, the Airacomet lacked the range of the modern Army fighters.

While the group's second progress report does mention transfer of the group to Palmdale AAF, this transfer was recommended to be delayed for 30 days. The recommendation was made that, "due to the confidential status of the equipment, the move should <u>not</u> be effected until the erection of the prefabricated hangar [now Building 531], the repair of the runways, the

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construction of the concrete warm-up apron, and the temporary additions to the operations building have been completed" (underline in original) (USAAF, 412 FG, 7 April 1944:3). It was estimated at that time that the work in progress at Palmdale AAF would be finished by 15 May. The 412 FG, along with the 445 FS, was transferred from Flight Test Base to Palmdale AAF on 1 June 1944 (USAAF, 412 FG, 9 June 1944:1).

By July 1944, personnel of the 412 FG had accumulated a total of over 368 hours of jet time, apparently all of it acquired in various models of the Bell Airacomet. The second American jet aircraft, the Lockheed XP-80, had made its first flight on 8 January 1944 from Flight Test Base. The personnel of the 412 FG may have been involved in part of early test activity of the XP-80; however, available 412 FG records do not make mention of the aircraft before July 1944. The XP-80, known informally as *Lulu-Belle*, was the first product of the organization that became known as the Lockheed *Skunk Works*, and was created under the leadership of famed aircraft designer Clarence L. "Kelly" Johnson.

The group's fifth progress report, written in July 1944, states, "Reports from British intelligence indicate that the German Air Force has been extremely active in the development and production of jet propulsion fighters. Apparently, the German aircraft industry is concentrating extensively on the production of a jet fighter which, they hope, will restore Nazi air supremacy in the West. Information received from prisoners of war indicates that German jet airplanes are definitely faster and have a longer range than current American models, and, what is more important, the Germans seem to have their version in full-scale production. Manufacture of this plane seems to have been scattered in numerous sub-assembly plants across Germany so as to render concentrated bombing attacks against the German jet industry more or less ineffectual, and there is excellent evidence from inside Germany that the production of jet airplanes is rapidly accelerating and expanding in spite of the British and American air offensive. It is reasonable to expect German jet fighter activity in strength on the Western Front in the near future" (USAAF, 412 FG, 11 July 1944:1-2). The imminent appearance of German jet fighters in strength was of great concern to American military and civilian leaders, for it could have presented a serious threat to the American daylight bombing offensive then underway against Germany.

In July 1944, sufficient jet aircraft had become available to activate a new fighter squadron, the 29th Fighter Squadron (29 FS) at Palmdale AAF. The new FS was transferred to a satellite base, the Army Air Sub-Base, in Bakersfield, California, on 5 August 1944.

On 18 July 1944, HQ/AAF informed Colonel Boushey, Commanding Officer of the 412 FG, that General Arnold (Commanding Officer, USAAF) had ordered the Air Force Board to conduct a series of tactical evaluation tests

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involving the XP-80, the XP-80A, and the latest models of conventional type fighters. The purposes of these tests were to, "determine individual fighter tactics against an enemy jet or rocket fighter with performance characteristics similar to the P-80 (i.e., the Me-163 or Me-262); to evolve the best possible fighter escort tactics with which to defend a bomber formation from attack by such fighters; and to discover what new factors, in any such an airplane will introduce into the problem of airdrome defense" (USAAF, 412 FG, 12 August 1944:2). The Air Forces Board, the 412 FG, the Materiel Command, and the Proving Ground Command all contributed personnel towards these tests.

Tests were conducted by Flight Test Base personnel, and assisted by personnel of the 412 FG in order to evaluate American fighter escort tactics in the light of the new German jets (LeVier 1996, Personal Communication). A partial report, dated 27 July 1944, indicates that a formation of B-24 Liberator strategic bombers, escorted by P-47 fighters, was subjected to a number of simulated attacks by an XP-80 aircraft (USAAF, 412 FG, 27 July 1944). Another partial report, dated 2 August 1944, reported on flight tests that compared a P-51D Mustang and the XP-80. The reports detailing the results of these tests were communicated directly to Headquarters, Army Air Forces (HQ/AAF), by Headquarters, 412 FG, Palmdale AAF, and were probably incorporated into a document titled "Final Report - Jet Vs. Conventional Aircraft Test," that was submitted to HQ/AAF by the 412 FG on 11 August 1944 (although mentioned in the records, this report was unavailable to the research team). It is presumed that HQ/AAF then passed this information down to both Eighth Air Force and Fifteenth Air Force headquarters, then conducting strategic bombardment campaigns against targets in German-occupied Europe from bases in Britain and Italy, respectively.

The test missions involved one XP-80, two XP-80A, six P-59, six P-38, six P-39, eight P-47, and eight P-51 aircraft. A 412 FG progress report dated 12 August 1944 states, "The only effective defense against an enemy jet or rocket fighter with the performance characteristics of the P-80 is the development of an American plane with equal performance - i.e., the P-80." The report goes on to state, "In attempting to defend a bomber formation against the P-80 (or similar enemy plane), the following tactics and formations are considered most effective:

1. Heavy numerical superiority.

2. A high cover flying four or five thousand feet above the bombers to catch attacking fighters attempting to zoom away.

3. A close cover, flying a cross-weave about two thousand feet above and slightly ahead of the bombers and diving to meet the attacking jet or rocket plane for a head-on shot. and,

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4. Fighter escort pilots must be trained and disciplined to remain close to the bomber formation at all times and NEVER to chase an attacking fighter comparable to the P-80" [capital letters and underline in original] (USAAF, 412 FG, 12 August 1944:3).

The above mentioned conclusions and recommendations presented in the progress report were reported to have been extracted from the "Final Report - Jet Vs. Conventional Aircraft Test," which was submitted to HQ/AAF by the 412 FG on 11 August 1944. The progress report dated 12 August 1944 concluded the following, "The P-80 is infinitely superior to any conventional type American fighter now in operation." It further recommended "P-80 production should be accelerated as quickly as possible," "Active pursuance of the proposed plan to acquire German jet and rocket advanced developments," and "Kerosene should be adopted as the standard fuel for jet airplanes."

On 17 August 1944, Colonel Boushey, Commanding Officer of the 412 FG, departed Palmdale AAF for a 30-day tour of duty in the United Kingdom "to discuss the latest developments in jet and rocket propulsion with officers of the Eighth and Ninth Air Forces (USAAF, 412 FG, 12 September 1944:1). During this time, the 412 FG released a detailed memorandum on the specialized training requirements of jet propulsion pursuit aircraft and power units. A third new fighter squadron, the 31st (31 FS), was activated at Palmdale AAF on 19 August 1944, and the 29 FS was transferred to the Oxnard Flight Strip, Oxnard, California, on 9 September 1944. Also reported was that the General Electric Corporation had requested that Walt Disney Studios in Burbank, California, produce an animated cartoon illustrating the basic principles of jet propulsion. A series of drawings forming the outline of the completed cartoon was completed by the Disney Studios and reviewed by pilots and engineering officers of the 412 FG. A number of corrections were incorporated into the script and the production of the completed cartoon was reportedly under way (USAAF, 412 FG, 25 August 1944:1-5).

By 16 October 1944, the 412 FG had accumulated over 781 hours of jet time, most of it in Bell Airacomets. Ongoing test activity included testing a towing device to enable a jet fighter to be towed by a bomber. These towing tests were conducted using a Douglas C-47 Skytrain to tow a Bell P-59 aircraft. Also reported was that Colonel Boushey's visit to the Eighth Air Force was well received and much interest was expressed in the American jet fighter program; that German jet and rocket aircraft were being encountered in increasing numbers during August and early September; that German fighter production was increasing and a sizeable percentage of this production was thought to be of jet and rocket type fighters; that British jet fighter operational activity was slightly ahead of American activity; and that no British jet fighters seemed to be the equal to the XP-80. The report offered the following summary, "Enemy jet and rocket activity is increasing.

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Allied fighter superiority is seriously threatened due to utilization of jet aircraft by the enemy and also due to the reported ability of the German aircraft industry to increase fighter production to 1,000 or 1,500 planes per month." The recommendations of the "jet vs. Conventional Fighter Tests" were accepted with apparent confidence by all personnel contacted. The report had received wide distribution. Eighth Air Force personnel were vitally interested in United States jet developments, especially as regards, "When ours can be committed to action" (USAAF, 412 FG, 16 October 1944:1-3).

On 11 October 1944, the 412 FG Headquarters and the 445 FS transferred to the Municipal Airport, Bakersfield, California. The 31 FS remained at Palmdale AAF and the 29 FS remained at Oxnard Flight Strip. All personnel and equipment of both the 412 FG and the 445 FS made the move to Bakersfield with the exception of the P-59 aircraft, which remained assigned to the 31 FS. All P-59 airplanes were to remain at Palmdale AAF "until security and maintenance requirements at Bakersfield and Oxnard allow assignment of P-59's to the individual squadrons at these locations" (USAAF, 412 FG, 16 October 1944:3-4). Three XP-80A aircraft, assigned to the Fourth Air Force, apparently remained stationed at Flight Test Base, Muroc AAF, although they could have also been stationed at Palmdale AAF.

A memorandum was issued on 14 November 1944 by command of General Arnold, HQ/AAF. Written on the subject of "Tentative Plans for the Utilization of Jet Propelled Aircraft," it stated that the USAAF planned to "utilize jet fighter aircraft in combat as quickly as practicable, and to treat jet equipment and units, not as 'special', but to follow existing practices as nearly as possible [underline and quotation marks in original]," although the memorandum also pointed out "present plans may be revised in accordance with the progress of the European War." The memorandum went on to state, "The mission of the 412th Fighter Group is to train as the first Operational Fighter Group utilizing jet-propelled equipment, and, concurrently, to assist other personnel or units, when designated, in transition from conventional to jet-propelled type aircraft." Additionally, personnel of the 412 FG were to assist in the accelerated service tests of the YP-80A aircraft that were to be conducted during the latter part of December 1944 or early January 1945. The 412 FG was to develop a training cadre that could be capable of functioning as three training teams to assist in the transition of other fighter groups from conventional to jet-propelled aircraft. To further facilitate the conversion process, the 361st Service Group was to be activated in December 1944 and based in Southern California, where it would service jet units and would work in conjunction with the 412 FG to gain operational experience. It was intended that the 361st Service Group would eventually provide maintenance support to jet aircraft deployed overseas.

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Following the eighth progress report dated 16 October 1944, no additional historic data are currently available that can provide detailed information on the activity of the 412 FG. It is known that the activity of the 412 FG continued until the end of the war, with the headquarters group coordinating the activity of the three squadrons that continued operating out of three satellite bases (Boushey 1997, Personal Communication). The 31 FS remained at Palmdale AAF until 10 July 1945, when it was transferred to Santa Maria AAF, California (Young 1997, Personal Communication).

The 412 FG transferred to Santa Maria AAF on 10 July 1945, where it remained until 29 November 1945 when it was transferred to March Field, Riverside, California. The 412 FG was inactivated on 3 July 1946 (Maurer 1983:296-297). On 18 August 1955, during the Cold War, the 412 FG was reactivated/assigned to Air Defense Command, served at Wurtsmith AFB, Michigan, and later to again be deactivated. In 1992, partly in recognition of the wartime contributions made by the 412 FG in the field of jet propulsion, the 6510th Test Wing (6510 TW), Edwards AFB, was formally redesignated as the 412th Test Wing (412 TW).

3.4.2 Air Force Plant 42 During the Cold War

Presented below is a history of AFP 42 during its early phase, before the construction of Sites 1, 2, 3, 4, 5, 6, 7, and 8. It is then followed by a history of the activity at each of the major sites located at the plant.

The AFP 42 concept probably originated with a Los Angeles Chamber of Commerce subcommittee responsible for seeking solutions to problems associated with aircraft industry development. Two members of the committee, Brigadier General William J. Fox and North American Aviation's Chief of Production, Donald F. Marshall, were instrumental in promoting and implementing the idea of an Air Force plant in Palmdale. They recognized the problems of testing high-performance aircraft in heavily populated areas and found most Los Angeles airports had little possibility for expansion. A 1949 suitability survey made of all airports in a 150-mile radius of Los Angeles resulted in finding the Palmdale Airport one of the least congested airfields with plenty of room for growth. It stated:

> The Palmdale Airport project which is now being expanded to embrace an area of approximately 4,043 acres, is free from practically all of the undesirable features now encountered by the companies in attempting to accomplish extensive assembly and test programs. The weather and visibility characteristics at Palmdale permit an operation flight schedule of 365 days per year. The area being acquired by the County permits the establishment of all required assembly and testing facilities of these industries at this location without interference with each other, and so located as to

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