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GROUNDWATER INVESTIGATION WORKPLAN

BUCKLEY ROAD VICINITY
San Luis Obispo, California

Submitted to:
Central Coast Regional Water Quality Control Board
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1.0 INTRODUCTION

Roux Associates, Inc. (Roux Associates) has been retained on behalf of the County of San Luis Obispo (County), to evaluate claims made against the County by the Central Coast Regional Quality Control Board (RWQCB) and various claimants regarding alleged groundwater contamination near Buckley Road. Roux Associates is submitting this Groundwater Investigation Workplan (Workplan) to the RWQCB, to conduct a limited groundwater investigation in the vicinity of the San Luis Obispo County Regional Airport (Airport), located at 901 Airport Drive in San Luis Obispo, California. For the purposes of this workplan, the Site consists of the secure operational areas of the Airport (runways, taxiways and associated security zones) and County owned land, outside of the airport operational zones (Figures 1 and 2). The scope of work described below was developed based upon a letter from the RWQCB dated February 26, 2016 (RWQCB, 2016A), and a meeting with the RWQCB held on March 8, 2016. The original version of this workplan was submitted to the RWQCB on April 15, 2016, and has been subsequently revised to address the conditional approval issued by the RWQCB in a letter dated May 13, 2016 (RWQCB, 2016B).

As described by the RWQCB (RWQCB, 2015 and 2016A), concentrations of the chlorinated solvent trichloroethene (TCE) have been detected in one or more water supply wells located in close proximity to 795 Buckley Road since the 1990s. When the supply wells were initially tested in the early 2000s, monitoring data indicated a maximum TCE concentration of 320 micrograms per liter (µg/L) in groundwater (RWQCB, 2015). Since that time, TCE concentrations have reportedly fluctuated, but there is an overall decreasing trend. The most recent groundwater monitoring data indicate a maximum TCE concentration of 61 µg/L in groundwater, which exceeds the California Department of Public Health's maximum contaminant level for TCE of 5 µg/L in drinking water (RWQCB, 2015).

There are at least two known groundwater wells on the Site (Figure 2). Groundwater samples collected recently by the County detected low levels of TCE. The County conducted reviews of current and past operations, and reviewed records and historical documentation. The County has not found any indications of storage, use, misuse, transfer, spills, or disposal of TCE or products containing TCE (County, 2016A, 2016B and 2016C; SAIC, 1997A and 1997B; USACE, 1999). Because this extensive research regarding historical activities conducted on County property has

revealed no indication that TCE was used or stored on the Site, the source of TCE in groundwater in the Buckley Road vicinity is unknown. Beyond the information already provided and that was transmitted by the County with the original version of this workplan (County, 2016C), research into potential additional aerial photographs and aerial photograph advanced analysis have not been completed. Any significant findings will be communicated to the RWQCB promptly, if any meaningful new information is identified.

Roux Associates submitted public records requests to relevant agencies in San Luis Obispo County for industrial properties in the Buckley Road area (Figure 3) that may have used TCE, including addresses 731 Buckley Road, 825 Buckley Road, 4675 Thread Lane (also known as 390 Buckley Road), 755 Buckley Road, 745 Buckley Road, 4665 Thread Lane, and 795 Buckley Road. The results of this initial public records review are summarized in Section 3.6.

Despite historical records that show no evidence of TCE use on County property, the February 26, 2016 RWQCB directive (RWQCB, 2016A) required the County to submit a detailed workplan to investigate the potential presence of TCE in soil gas and groundwater along Buckley Road and at other locations in the vicinity of the Site. In summary, the investigation portion of the directive states that the workplan must include:

- A proposal for collecting groundwater samples along Buckley Road;
- A proposal for soil gas sampling along Buckley Road, specifically at stormwater drainage pathways;
- A proposal for soil gas sampling at the former leach field area located east of Runway 25, including a provision for collecting groundwater samples where TCE is detected in soil gas; and
- A proposal for soil gas sampling at other areas at the Airport, based on a review of aerial photographs, disposal records, and operational records.

Roux Associates is proposing a phased approach to address the RWQCB directive. This workplan primarily addresses Item 1; while Items 2, 3, and 4 are addressed in a Soil Gas Investigation Workplan, which is being submitted concurrently under separate cover. Item 3 as it relates to groundwater is also partially discussed in this workplan, but will ultimately be addressed in an

addendum to this workplan once the results of the first phases of groundwater and soil gas sampling are reported.

The RWQCB directive also requested additional documentation regarding historical operations at the Airport, including:

- Copies of current and historical aerial photos and historical surface drainage maps;
- Information on current and former owners, lessees, and operators of properties within the area now owned by the Airport;
- Provide information on supply wells and monitoring wells located on airport property;
- Hazardous Material Business Plans;
- Information for other properties in the area that may have used TCE; and
- Names and contact information for employees involved in waste disposal operations.

The majority of this information was provided by the County in their April 15th, 2016 submission (County, 2016C) and subsequently in individual data transmittals and/or file review sessions with the RWQCB.

Copies of available aerial photographs are included electronically in their acquired format as Appendix A and historical topographic maps are presented in Appendix B. The aerial photograph search and analysis is not complete, and aerial photographs have not been formally rectified. Available surface drainage maps are included as Appendix C. Information regarding past use of County property for military operations and thereafter, are summarized in Section 3.2; and pertinent documents are included in Appendix D.

Information relating to current and former groundwater wells on Airport property was found in a regional well location map published in a 1987 regional groundwater study (Cleath, 1987; see Figure 2); however, only two wells that have been sampled are known at this time to the County and well logs have not been located. The County has transmitted all available well logs that were held by the County since the April 15, 2016 submission to the RWQCB. One geological log for a boring advanced to 50 feet below ground surface (bgs) from a Buckley Road leaching study is included in Appendix E.

Additional detailed information has been located regarding two entities in the Buckley Road area that did use TCE (Section 3.5, with manifests in Appendix F), and also other entities who may have used TCE are summarized in Section 3.6; and, relevant historical industrial addresses have been included in Appendix G. Additional information for select items, as well as informational documentation item numbers 2, 4, and 6 above were provided by the County in a letter that was submitted concurrent with the original workplans under separate cover (County, 2016C).

2.0 PRELIMINARY CONCEPTUAL SITE MODEL

The following presents a preliminary conceptual site model, as very little to no information is known regarding the potential sources or pathways for TCE impacts detected in industrial/commercial and residential groundwater wells in the Buckley Road and Site vicinity. Sparse information is currently available related to the lateral and vertical lithologic and hydrogeologic setting, let alone sub-regional groundwater horizontal and vertical flow characteristics and the localized influences of groundwater extraction on regional groundwater flow.

2.1 Site Description

The Site is located approximately 3 miles south-southeast of the City of San Luis Obispo, California (Figure 2). The Site is situated west of Highway 227, south of Tank Farm Road, and north of Buckley Road. It consists of approximately 340 acres (Coffman, 2005). In addition, there is a fire station located at 4671 Broad Street, and other locations in this area include a restaurant and car rental businesses. The Airport and these locations are collectively referred to herein as the "Site."

2.2 Topography

The Site elevation ranges from approximately 135 feet along the western Site boundary, to approximately 215 feet at the southeastern Site boundary at the intersection of Buckley Road and Highway 227 (United States Geological Survey [USGS] topographic map, Pismo Beach, California Quadrangle; Appendix B). The Site and vicinity slope generally towards the northwest and west.

2.3 Drainage

General plans for the Site describe the topography as nearly level, with surface drainage generally running from east to west (County, 2016D). An engineered system of surface collection ponds and drainage conveyances help move water off the Site and discharge it in one of several locations, including an outfall near Buckley Road (Mead and Hunt, 2006). Historically, much of the southeastern portion of the Site and drainage onto the Site from the north or east drained first to a detention area or basin onsite, which was then conveyed via a pipeline under Runway 29,

toward Buckley Road and thereafter into a swale/depression and under a culvert to south of Buckley Road.

Main Site operations and maintenance, however, are currently drained toward a basin located north of the Site (Mead and Hunt, 2006). The Fire Station appears to be drained toward off-site detentions basins located north of Highway 227 or south of Buckley Road. A figure showing current drainage pathways, as well as previous drainage pathways utilized as late as 2006 are provided as Appendix C (Mead and Hunt, 2006).

2.4 Geology

The Site is located within the Coast Range Geomorphic Province of California. The province is characterized by northwest-trending mountains and valleys located between the Great Valley of California and the Pacific Ocean. The Site is situated in the San Luis Valley, which is a basin filled with Holocene-aged alluvium with fan deposits, and a maximum thickness of approximately 160 feet (Dibblee, 2006; shown in Figure 4). The alluvium rests unconformable on bedrock of the Franciscan Formation. The valley is bounded on the northeast by the Santa Lucia Range, on the southwest by the San Luis Range, and on all other sides by contact with impermeable Miocene and Franciscan Group rocks and the Los Osos and Edna Faults (County, 2015).

The Site and vicinity are located in the northeastern portion of the Pismo Beach Quadrangle. The Site and businesses on Buckley Road are situated on older alluvium consisting of clay, dissected gravel, and sand (Dibblee, 2006). The alluvium is thickest (more than 160 feet thick) in the western portion (Cleath, 1987). Immediately to the east of the Site is described as consisting of Franciscan Rocks, pervasively sheared mélange, primarily dark claystone and sandstone, marine sedimentary and volcanic rocks from the Jurassic and Cretaceous periods. To the south is described as the Paso Robles Formation from the Pliocene to Pleistocene, consisting of older alluvial gravel, sand, and clay.

According to an environmental assessment performed in 2005, the soils beneath the Site are classified as sandy loam, silt-clay materials, and Cropley clay. This soil is described as “somewhat to very deep and well drained ... (with) very slow permeability, medium surface runoff, and moderate erosion hazard” (County, 2016A). Soil from a boring advanced south of

Buckley Road was described as sandy silty clay in the shallow vadose zone. At approximately 25 feet bgs, soil was described as clayey sand with gravel (Beacon, 2009 and Appendix E). A search was performed for boring logs for groundwater wells installed at the Site, but none were located and a request to the California Department of Water Resources for the boring logs for the two known wells on the Site is still outstanding. The County has provided all available well logs in their possession to the RWQCB in a transmission after the April 15, 2016 response.

2.5 Hydrogeology

The Site and vicinity lie within the northern/western portion of the San Luis Obispo Valley Groundwater Basin, which consists of Pleistocene to Holocene-age terrestrial deposits of gravel, sand, silt, and clay of fluvial origin (DWR, 2003). Primary groundwater producing formations include the Franciscan Formation, the Squire member of the Pismo Formation, and alluvium, with the alluvium being the primary groundwater-bearing material (Cleath, 1987). Saturated aquifers within the alluvium are typically less than 40 feet thick and are interspersed with clay layers (Cleath, 1987). The Edna Fault is reportedly located east of the Site, but the fault does not appear to affect the movement or quality of groundwater (DWR, 2003). Groundwater in the basin is recharged through infiltration of precipitation (between approximately 19 to 23 inches per year), applied irrigation water, and streamflow (Cleath, 1987).

Water supply in the region is obtained primarily from groundwater (Cleath, 1987). Consequently, the region surrounding the Site has many groundwater wells, especially in the more developed areas and along Highway 227 (Cleath, 1987), including those sampled recently for TCE (RWQCB, 2015). Agricultural, municipal, and industrial extractions total approximately 5,800 acre feet per year (DWR, 2003). Trend analysis of groundwater levels suggest that groundwater levels are quickly responsive to increased pumping during droughts (Cleath, 1987).

The groundwater gradient in the San Luis Valley generally flows toward San Luis Obispo Creek from the east and north; in the southeast portion of the Site, however, information on groundwater flow is insufficient to draw definitive conclusions, but may be expected to flow toward the west northwest, generally paralleling the topography as it flows into the San Luis Valley Groundwater basin between the Santa Lucia and the San Luis Ranges (Cleath, 1987). Cleath noted a possible depression in groundwater levels south of Buckley Road, possibly due to groundwater pumping

practices (Cleath, 1987). The local groundwater flow direction may vary vertically and is also influenced by localized groundwater production for both residential and industrial use along Buckley Road. Well logs and screened intervals for any wells in the region are unknown at this time.

At least six groundwater extraction wells do currently, or have existed in the Buckley Road industrial/commercial area as part of permitted Non-Transient/Non-Community Water Systems associated with industrial/commercial uses, including Strasbaugh, Noll, and Buttonwood Industrial Park (SDWIS, 2016). Where a Non-Transient/Non-Community Water system is defined as, *"A public water system that regularly supplies water to at least 25 of the same people at least six months per year. Some examples are schools, factories, office buildings, and hospitals which have their own water systems"* (USEPA, 2016). The magnitude and frequency of groundwater extraction associated with these non-residential uses and the subsequent local influence of groundwater extractions on the general regional groundwater gradient and flow direction both laterally and vertically is not known.

In 2015, at the Former San Luis Obispo Tank Farm located immediately to the west of the Airport, depth to groundwater ranged between approximately 10 feet to 25 feet bgs. The direction of groundwater flow was calculated to generally flow toward the southwest under a hydraulic gradient of approximately 0.006 ft/ft. (Padre, 2015).

2.6 Hypothetical Sources, Pathways, and Receptors

As stated above, concentrations of TCE in groundwater have been detected in several water supply wells located in close proximity to Buckley Road south of the Site. The source of these impacts is unknown. A Soil Gas Investigation Workplan is being submitted to the RWQCB under separate cover to screen areas of the Site for the presence of VOCs in shallow soil gas, including TCE. Although the RWQCB has issued informational/investigation directives to at least three entities in the Buckley Road vicinity, a comprehensive knowledge of past solvent storage, use and disposal is not known for all of the industrial/commercial entities in the Buckley Road vicinity.

The RWQCB has noted that drainage pathways on the Site, including in particular a storm drain pipe travelling under Runway 29 and flowing toward and south of Buckley Road, may have hypothetically transported discharges from the Site to the subsurface offsite. A search of numerous historical records by the County has not found any indication that TCE was used, disposed of, or spilled on the Site (County, 2016A, 2016B and 2016C). As discussed in Section 2.5, the groundwater flow direction, although primarily east to west, is also uncertain both: a) laterally and vertically; and, b) due to historical and current pumping activities (Cleath, 1987).

Known and potential receptors of impacted groundwater are water supply wells located south of Buckley Road.

3.0 REGIONAL ENVIRONMENTAL OVERVIEW

The historical uses of the Site and surrounding properties were researched by reviewing:

- information already submitted and new information that was sent concurrently by the County with the original workplan to the RWQCB (County, 2016A, 2016B and 2016C);
- historical aerial photographs (Figures 5A through 5L and Appendix A) and historical topographic maps (Appendix B);
- additional information relating to evaluations of the former military use of County property from the United States Army Corps of Engineers (USACE) are included in Appendix D;
- manifest summaries and selected manifests indicating use and disposal of TCE and other solvents are included in Appendix F; and
- public records obtained from relevant San Luis Obispo agencies for the industrial and commercial businesses along Buckley Road (Appendix G).

3.1 County Property Research and Submissions to the RWQCB

A review of the Airport's Material Safety Data Sheet (MSDS) records going back 30 years (provided in a letter from San Luis Obispo County, dated January 20, 2016 [County, 2016A]), shows the only 'solvents' used were two paint thinner products (Ace Paint Thinner and Klean Strip Paint Thinner), which use aliphatic hydrocarbons Stoddard Solvent as active ingredients, and two concrete degreaser products (SSS HD Concrete Degreaser, Oil-Eater Cleaner Degreaser), which use sodium hydroxide or terpene hydrocarbons (citrus derivatives) as primary active ingredients. The quantities of these chemicals on Site were less than 5 gallons at any one time (County, 2016A).

The County identified only two spills (both were fuel spills): one in 1990, and another in 1988 (County, 2016A). These spills occurred in an area of the Site that drains to the north. While subsurface petroleum hydrocarbon (jet fuel) impacts were found resulting from drainage off this portion of the Site, the reports do not indicate that TCE was found in the soils or groundwater (County, 2016A). The same location where military operations, if any, would have taken place is believed to have drained into this area of the Site. In 1995, a Phase II environmental assessment

of the Filbin site, located immediately west of the Site, found no chlorinated solvents (or other impacts) in the groundwater (County, 2016A).

3.2 Department of Defense, Formerly Used Defense Site Evaluation

On behalf of the USACE and the Department of Defense, SAIC performed a thorough evaluation of the past operations of the Site as a former defense site and general activities since then (key documents provided in Appendix D). The general findings of that process (corroborated by historical aerial photographs and topographic maps) which culminated in a formal Findings of Fact document include, but are not limited to:

- The Airport existed prior to military involvement. Reportedly, the County leased 116 acres of land in 1938 (SAIC, 1997A). The airport reportedly opened in March, 1939 (County, 2014). While starting in November 1938, the Airport was also used by the U.S. Army Air Corps and the California National Guard (USACE, 1999). Starting in 1938, the first use of the Airport by the Military was reportedly related to, "the 40th Division Aviation of the California National Guard approved use of the airport for training purposes," and indicated that, "the airport was to consist of 4,000 foot main runway, an administration building, hangars, photographic unit, barracks, mess halls, mechanic shops, two 47s reconnaissance/photograph planes, and five Douglas 32s" (SAIC, 1997A). What appear to be dirt strips are visible on the earliest available aerial photograph dated 1939 (Appendix A);

- During and immediately after the War (starting in 1943 [USACE, 1999]), reportedly ending in 1946, the U.S. Navy leased the Airport as an auxiliary backup field to the Alameda Naval Air Station for emergency landings and to support land and sea operations. However, the Airport was reportedly not frequently used, and only five people were stationed at the Airport (SAIC, 1997A). The Navy's use of the Airport reportedly did not even include fuel storage, and no military planes were reportedly stored at the airport during the Navy's occupancy (SAIC, 1997A);

- In 1946, reportedly the first commercial airline operations (Southwest Airways) began at the Airport. (SAIC, 1997A and County, 2014). The Southwest Airways operations reportedly stopped in 1955 (San Luis Obispo County, 2014). Development of more

landing strips and an airplane hangar is visible in the 1949 aerial photograph and airport development is evident in the 1952 topographic map (Appendix A);

- In the 1960s, Coastal Air reportedly operated one Underground Storage Tank selling fuel to private planes, while reportedly no commercial airline operations were based at the airport in the early 1960s (SAIC, 1997A);

- Reportedly, in the late 1960s, commercial airline operations resumed at the Airport (County, 2014). Swift Aire was based at the Airport between 1969 and 1981. Significant building development is visible on the 1965 topographic map and the 1972 aerial photograph (Appendix A); and

- There is only one mention of any non-petroleum related hazardous materials storage in the SAIC documentation relating to the American Eagle/Wings West hangar (SAIC, 1997B).

In all of the information reviewed by SAIC on behalf of the Department of Defense, it appears that the only documented, or even suspected, underground storage of fluids at the Airport included petroleum hydrocarbons, with the exception of one or two waste oil, or underground slop storage tanks (SAIC, 1997A). No indications of chlorinated solvent (or TCE) use, handling or disposal or explicit mention of any hazardous materials disposal areas during, or after military use at the Airport were noted by SAIC.

The military use of the Airport at maximum intensity between 1938 and 1946 appears to have involved basing of approximately seven military airplanes for aerial observation and civilian training. Although mechanic shops were noted as being present, it is relatively unlikely, based upon historical evaluations of military chlorinated solvent use, that such a small military operations would rise to the level of obtaining highly controlled and prioritized chlorinated solvents (Doherty, 2012, attached as Appendix D.4).

The only two significant commercial operators at the Airport until the 1980s were Southwest Airways between approximately 1946 and 1955 and Swift Aire between approximately 1969 and 1981 (County, 2014).

3.3 Historical Aerial Photographs

Scaled and aligned aerial photographs are presented in Figures 5A through 5L. The aerial photograph acquisition, review and analysis task is not complete; however, the aerial photographs as currently presented are informative for evaluating general geographical/land-use changes in the Buckley Road vicinity.

Historical aerial photographs were obtained from EDR for the years 1939, 1949, 1956, 1959, 1963, 1965, 1972, 1978, 1987, 1994, 2002, 2005, 2009, 2010, and 2012. Historical aerial photographs for the years 1939, 1949, 1956, 1999, 2003, 2007, 2011, and 2014 were obtained from San Luis Obispo County. The historical aerial photographs for the years 1960, 1963, 1981, 1994, and 2011 were obtained from the United States Geologic Survey (USGS). Copies of these photographs are included as Appendix A.

3.4 Historical Topographic Maps

Historical topographic maps of the Site were obtained from the USGS for the years 1942, 1952, 1965, 1978, and 1998 and are presented in Appendix B. The topographic maps corroborate the reported general development of the Site and surrounding area, as shown in the historical aerial photographs.

3.5 DTSC Manifest Review

The DTSC Hazardous Waste Tracking System (HWTS) was consulted and indications that TCE-containing wastes were shipped by Noll and Dolphin Shirt Company were found (Appendix F.1). Although a manifest report for manifests between 1983 and 1993 was requested from DTSC, no manifest records were located by DTSC for the generator identification numbers for Dolphin Shirt Company, Noll or Strasbaugh in that period.

Selected manifest copies were obtained from DTSC, and show that the Dolphin Shirt Company was shipping wastes containing TCE (RCRA Waste Code D040), dating back at least to 2000 (Appendix F.2). Between about 2000 and 2002, the Dolphin Shirt Company was routinely manifesting between 9 and 16 gallons of a TCE-containing waste liquid and did so at least 11 times between 2000 and 2002. Thereafter, not all manifests were obtained, however, in at least one instance between 2003 and 2007, at least one shipment of a TCE containing waste liquid was manifested by Dolphin Shirt Company each year.

Based upon the selected manifests obtained, Noll regularly shipped and manifested waste liquid containing tetrachloroethene (PCE) and in at least one instance in 2010 shipped waste liquid containing TCE (Appendix F.3).

Strasbaugh also was regularly shipping and manifesting waste liquids containing PCE. A chronological presentation of all manifests obtained for all three entities is presented in Appendix F.4.

3.6 General Buckley Road Vicinity Records Review

Records review requests were submitted and commercial databases were consulted associated with evaluating potential solvent/TCE use in the Buckley Road vicinity.

A city directory abstract of the area was obtained from EDR and is presented in Appendix G. The directories searched between 1962 and 2013 show that the Site and immediately surrounding properties were occupied by tenants including those in construction, furniture making, fabric, woodwork, auto body services, and others. A full version of the EDR-City Directory List is available in Appendix G. Local searches of San Luis Obispo phone books indicate that the EDR-City Directory List is incomplete, as Noll does appear listed at 390 Buckley Road in historical phone directories dating as far back as 1966.

Roux Associates submitted public records requests to relevant agencies in San Luis Obispo County for addresses 731 Buckley Road, 825 Buckley Road, 4675 Thread Lane (also known as 390 Buckley Road), 755 Buckley Road, 745 Buckley Road, 4665 Thread Lane, and 795 Buckley Road. Relevant records obtained from each agency for the Buckley Road vicinity are discussed in Section 3.6.1 and Section 3.6.2.

3.6.1 Information Sources

Agencies consulted included the San Luis Obispo County Building and Planning Department (DBP), the San Luis Obispo County Environmental Health Services Department (DEH), Department of Public Works (DPW), Air Pollution Control District (APCD), Department of Water Resources (DWR), the Department of Toxic Substances Control (DTSC), and the Central Coast Water Resources Control Board (RWQCB). Request dates and responses for each agency are provided below.

San Luis Obispo County Department of Building and Planning

Records were requested on March 25, 2016. On March 31, 2016, Ms. Donna Hernandez informed Roux Associates that her department had records in electronic copy, hard copy, and microfiche. Roux Associates requested to receive the electronic records.

San Luis Obispo County Environmental Health Services

Records were requested on March 25, 2016. Ms. Cindy Rattigan, the Supervising Administrative Clerk, informed Roux Associates on March 29, 2016, that her department had multiple records regarding addresses in the Buckley Road vicinity.

San Luis Obispo County Department of Public Works

Records were requested on March 22, 2016. On March 25, 2016, Mary Janowicz, the Supervising Administrative Clerk, informed Roux Associates that her department did not have records for the addresses requested. She advised that Roux Associates contact the Department of Building and Planning and the Environmental Health Services Department.

Air Pollution Control District

Records were requested on March 11 and March 25, 2016. On March 28, 2016, Ms. Alyssa Roslan, the Administrative Supervisor, informed Roux Associates that her department had permits for addresses 731 Buckley Rd, 4675 Thread Lane, and 825 Buckley Rd. The permits were attached to her response.

The California South Central Department of Water Resources

Records were requested on March 30, 2016. Notification from the DWR with regards to available records was not received at the time of the submission of this Workplan.

Central Coast Regional Water Quality Control Board

Records were requested on March 29, 2016. On April 7, 2016, Roux Associates received files from the RWQCB for the addresses 825 Buckley Road, 795 Buckley Road, and 4665 Buckley Road.

3.6.2 Summary of Buckley Road Vicinity Industrial Development

The area south and southwest of the Airport, immediately south of Buckley Road, starting from just east of Thread/Noll Road and extending west of Buttonwillow Road has been an increasingly

active industrial and commercial area dating back to the mid-1960s. Aerial photographs indicate significant buildout of primarily three properties on Buckley Road in the late 1960s into the early 1970s; see Figures 5A through 5L. The only historical identified operation in the late 1960s is for Noll; the other businesses operating at that time are unknown currently.

Although the Noll entity was manifesting hazardous materials regularly in the early to mid-1990s, no manifest records were located by DTSC for any Noll entity prior to 1993. It is not known what the disposition of any hazardous materials might have been due to the regular operations of Noll between 1966 and 1993.

Beyond the TCE containing hazardous waste liquids noted in manifests described in Section 3.5, no definitive information regarding TCE use at the Buckley Road properties is indicated in the information reviewed, although several mentions of solvent use were made in the information. File reviews are still ongoing related to these properties and additional information will be provided to the RWQCB and any significant findings relating to potential historical solvent or TCE use along Buckley Road will be communicated to the RWQCB promptly.

4.0 PROPOSED SCOPE OF WORK

All work will be performed under the direction of a California-registered Professional Geologist. The groundwater investigation will include the following:

- Advance one boring using sonic drilling technology;
- Advance cone penetrometer testing (CPT) borings at five locations, with one location being advanced primarily for lithologic comparative purposes and preliminary groundwater data collection; and,
- At four CPT boring locations, collect up to five discrete-depth groundwater samples to a maximum depth of approximately 100 feet bgs.

4.1 Proposed Groundwater Sampling Locations

As shown in Figure 6, the proposed scope of work involves the collection of groundwater samples at discrete depths from five locations south of Runway 29 and parallel to Buckley Road. The scope of work requested by the RWQCB has been divided into four phases, including:

I) Pre-field planning and Airport access;

II) Proof of concept, where lithologic data will be collected both by logging samples collected by sonic drilling and comparing those results to results derived by CPT and will also be used for informing the vertical groundwater sampling strategy;

III) Groundwater sample collection parallel to Buckley Road, at four locations at multiple depths; and

IV) Groundwater sampling at up to three locations north of Runway 29.

Because of the additional security requirements and access considerations necessary for working on active airport property, Phase I will likely require six weeks to complete, but is being initiated now. The anticipated scope of work for each phase is further described below.

4.1.1 Phase I – Pre-field Planning and Airport Access

Work on the Airport will be consistent with all applicable Federal Aviation Administration (FAA) guidance. Specifically, no borings will be located in the designated Runway Safety Areas (RSA). Required clearances and escorts for personnel will be arranged. All locations will be cleared with Airport staff during the set-up phase. These logistical arrangements may require at least 1 month

to complete following approval of this workplan. This phase will also include health and safety documentation development, refinement of locations, dig-alert/boring clearance protocol development and groundwater sampling permitting.

4.1.2 Phase II – Proof of Concept

Phase II of the scope of work will commence with the drilling of one boring using sonic drilling technology to a depth of approximately 100 feet bgs, followed by one to two CPT borings advanced in the immediate vicinity (Figure 6). A second CPT boring may be advanced to perform pore-pressure dissipation testing at selected depths where coarser grained lithology is encountered, to collect data to guide the groundwater sampling strategy. Groundwater samples will be collected at up to five water-bearing zones and submitted to a fixed analytical laboratory on a short turnaround time for this location. Following the advancement of these borings, the visual soil logging results will be compared to the CPT stratigraphic logging. The work will be done in conjunction with RWQCB oversight to confirm workplan procedures and discuss any potential modifications to the approved workplan, if necessary, before continuing with subsequent phases.

4.1.3 Phase III – Groundwater Sample Collection near Buckley Road

At four other locations near Buckley Road, an initial CPT boring will be advanced to approximately 100 feet bgs, where groundwater will be collected from a temporary well or through the CPT string, depending on expected and/or real-time groundwater yields. Based on the results of the CPT stratigraphic logging, up to four additional discrete sampling depths will be determined for each location in consultation with the RWQCB, with a preference toward even spacing within the aquifer (for example, at 20, 40, 60, and 80 feet bgs).

A new boring will be advanced to reach each targeted discrete depth to minimize the potential cross-contamination between water bearing zones and to maximize sample depth integrity. Groundwater samples will then either be collected through the CPT string, or a temporary well will then be placed within each boring to retrieve the groundwater sample. Temporary wells will be left in place for no more than 24 hours to minimize the potential for cross-contamination.

Each of the four groundwater sample locations will be advanced approximately every 200 feet parallel to Buckley Road to characterize an approximately 800-foot section of the area south of Runway 29.

CPT drilling procedures are further detailed below in Section 4.4. Groundwater sampling procedures are detailed in Section 4.5.

4.1.4 Phase IV – Groundwater Sample Collection North of Runways

As requested in Item Number 3 of the RWQCB workplan requirements, shallow groundwater samples will be collected, if merited based upon the results of soil gas sampling. At this time it is anticipated that groundwater samples will be collected at three locations north/east of Runway 29, at two depths (shallower than 40 feet bgs) using a hydropunch sampling technique. Recommendations for shallow groundwater sampling locations and the methodology for additional groundwater sampling will be made as part of an addendum to this workplan following the soil gas sampling.

4.2 Pre-Field Activities

Prior to intrusive work at the Site, the field work contractor will submit the appropriate groundwater sampling permit application, make appropriate notifications of intended drilling activities, clear boring locations, and prepare a Site-specific health and safety plan. These activities comprise Phase I of the scope of work and are detailed below.

4.2.1 Airport Security Clearance/Boring Locations

Proposed locations will first be cleared with Airport staff. Required clearances and escorts for personnel will be arranged. Work on the Airport will be consistent with all applicable FAA guidance (2011). Boring locations may be modified slightly based upon detailed review of Airport-specific plans and diagrams once the conceptual locations are approved by the RWQCB.

4.2.2 Groundwater Sampling Permit Application Submittal

The contracted drilling company will submit a Monitoring Well Permit Application to the San Luis Obispo County Public Health Department. Advancement of drilling activities will not commence until the permit application is approved by the Public Health Department.

4.2.3 Dig-Alert

The proposed boring locations will be pre-marked with white paint, and Underground Service Alert (USA) of Southern California will be notified at least 48 hours in advance of drilling to demarcate utilities coming to and through the Site. Intended drilling locations will be modified or relocated, as necessary, based on the proximity to subsurface utilities.

4.2.4 Geophysical Investigation and Borehole Clearance

A private geophysical services and utility locating firm will be contracted to evaluate the proposed boring locations and mitigate the risk of disrupting potentially buried utility lines. As part of the investigation, the geophysical services company may use a variety of tools, including ground penetrating radar (GPR), radio detection (RD-4000), Dynatel diagnostic testing equipment, and M-Scope metal detection equipment. Intended drilling locations will be modified or relocated, as necessary, based on the results of the geophysical investigation.

At each subsurface location to be advanced, a hand auger, air-knife or other method will be used to clear the boring to at least 5 feet bgs. The clearance methodology may vary by location.

4.2.5 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) will be prepared to identify significant risks and hazards to be potentially encountered during implementation of field work. During the implementation of field work, exclusion and work zones will be clearly demarcated with orange cones to indicate limited access areas for drilling and sampling activities. Field workers will acknowledge their familiarity with all safety procedures and indicate their intent to follow the HASP by signing the HASP after tailgate safety meetings, which will take place at the beginning of each field day. All personnel working in the exclusion zone will be OSHA trained, consistent with federal regulation 29 CFR 191.120. The HASP will be submitted to the RWQCB at least two weeks prior to the initiation of fieldwork.

4.3 Sonic Drilling Boring

As discussed with the RWQCB during the March 8, 2016, meeting, the ability of CPT to accurately characterize the lithology will be evaluated by advancing one boring using sonic drilling technology. Visually logged soil samples will be compared to an adjacent boring advanced with a CPT drilling rig and the resulting CPT stratigraphic logging.

Sonic drilling uses vibration, rotation, and downforce of the sonic drill casing to advance the borehole. Sonic drilling technology uses both an inner core barrel and an outer sonic drill casing to penetrate the subsurface. The inner core barrel will be advanced ahead of the sonic drill casing collecting the first section of the continuous sample. Next, the overriding outer sonic casing will be advanced over the inner core barrel. Last, the inner core barrel with the continuous sample inside will be extracted while the outer sonic drill casing remains in the subsurface at depth. The sample will then be brought to the surface and extruded into a bag or core box. The result is continuous core samples of unconsolidated sediment from the ground surface to the desired depth.

Soil samples will be logged to total depth under the direct supervision of a California Professional Geologist in accordance with the Unified Soil Classification System (USCS) for materials, color, moisture, and other pertinent geological observations, including visual identification of the percentages of different grain sizes. Soil samples will also be monitored for potential organic vapors with a handheld photoionization detector (PID) that will be calibrated prior to the start of each day. The soil samples from the sonic boring will be kept at the Site for at least one month to allow for potential re-consultation.

4.4 CPT Sounding

To obtain accurate and consistent descriptions of subsurface lithology during the investigation, CPT stratigraphic logging will be completed in accordance with American Society for Testing and Materials (ASTM) Standard D-5778-12. This will be achieved by using a CPT drilling rig to hydraulically advance 1 ¾-inch outer diameter and ¾-inch inner diameter steel rods. The leading steel rod has a cone tip which measures the tip resistance, penetration pore pressure and sleeve friction in 5 centimeter intervals. These measurements will then be used to develop stratigraphic relationships determined by using methods developed by Robertson and Campanella.

In Phase II of the scope of work, one boring will be advanced via a CPT drilling rig to approximately 100 feet bgs for lithological comparison with soils visually logged using the sonic drilling rig. A groundwater sample will be collected near the terminal depth of this boring. A second CPT boring may be advanced as part of Phase II to perform pore-pressure dissipation testing at selected depths where coarser grained lithology is encountered, to collect data to guide the groundwater sampling strategy. CPT stratigraphic plots from the inital boring will be

reviewed in the field and depths for subsequent groundwater samples in the immediate vicinity will be selected in consultation with the RWQCB. Up to four additional borings will be advanced in the immediate vicinity, and groundwater samples will be collected at up to four shallower water-bearing zones and submitted to a fixed analytical laboratory on a short turnaround time. See Section 4.5 for additional details regarding groundwater sampling methods.

Following the advancement of these Phase II borings, the visual soil logging results will be compared to the CPT stratigraphic logging. The work will be done in conjunction with RWQCB oversight to confirm workplan procedures and discuss any potential modifications to the approved workplan, if necessary, before continuing with subsequent phases.

In Phase III of the scope of work, the initial boring at each of the four groundwater sampling locations will be advanced to approximately 100 feet bgs. A groundwater sample will be collected near the terminal depth of this boring. CPT stratigraphic plots from this boring will be reviewed in the field and depths for subsequent groundwater samples in the immediate vicinity will be selected in consultation with the RWQCB. For each general location, four additional, separate borings will be advanced with the CPT to the targeted sampling depth. Groundwater samples will be collected approximately every 20 vertical feet.

4.5 Discrete Depth Groundwater Sampling

Groundwater samples will be collected either through the CPT string using a stainless steel or PVC screen or by using a ¾-inch diameter temporary polyvinyl chloride (PVC) well equipped with a 5-foot slotted screen. Once the sampling depth has been selected in consultation with the RWQCB, the drilling rig will be used to advance a single boring to the desired depth. Once the targeted depth has been reached, either a disposable tip will be left in ground and a screened portion of a groundwater sampling tool will be exposed, or in the temporary well scenario, the screened portion of the PVC pipe will be placed inside the boring to near the terminal depth and will be allowed to fill with groundwater. Groundwater samples will be collected using a small diameter disposable or stainless steel bailer lowered into the screened section. Appropriate laboratory-provided containers will then be filled with the appropriate volume of water, labeled, and stored in a chilled cooler pending pickup by the selected laboratory. As requested by the RWQCB in the May 13, 2016 conditional approval letter (RWQCB, 2016B), if sufficient water

exists, the pH, electrical conductivity, and temperature will be measured using a field instrument calibrated to manufacturer recommendations. Groundwater samples will be sent to a California state-certified fixed analytical laboratory under standard chain-of-custody procedures where they will be analyzed for VOCs and oxygenates using USEPA Method 8260B. Samples from the first few locations may be analyzed on an expedited turnaround, while later samples may be on a standard turnaround time.

One field duplicate sample will be collected at each of the four groundwater sampling locations. One equipment blank will be collected for each day that groundwater sampling is performed.

Upon completion, each boring will be sealed from the bottom with a bentonite slurry according to the permit specifications. Between borings, all reusable downhole equipment will be decontaminated using four-step wash process, including an initial fresh water rinse, a non-phosphate detergent wash, a second fresh water rinse, and finally a rinse with distilled water. The location of each boring will be surveyed using a hand-held global positional system (GPS) unit.

4.6 Investigation Derived Waste

Decontamination rinsate and disposable sampling equipment will be collected and contained in Department of Transportation (DOT)-approved 55-gallon drums. Non-archived drilling residuals such as drill cuttings from the sonic drilling borehole will also be placed into DOT-approved 55-gallon drums. All drums will be labeled, sealed, and stored temporarily on-Site, pending off-Site disposal in accordance with state and federal regulations.

4.7 Reporting

Data from the CPT logging and groundwater sample lab data will be transmitted electronically to the RWQCB in data packages within no more than two weeks after data finalization. If the soil gas investigation indicates that on Site shallow groundwater sampling north of Runway 29 is required, an addendum to this workplan will be submitted.

The investigative activities will be documented in a formal Groundwater Investigation Report (Report), which will be will be submitted to the RWQCB for review, comment, and approval. The report will include an updated conceptual site model, figures, including geologic cross-sections, and tables. The Report will also include conclusions relative to potential TCE groundwater

migration and recommendations for additional actions (if any). The Report will include the following Sections:

1. Introduction
2. General Background
3. Investigation Objectives
4. Scope of Work
5. Sample Collection and Procedures
6. Field Observations and Analytical Results
7. Discussion of Results
8. Summary, Conclusions, and Recommendations
9. Closing
10. References

It is expected that a comprehensive Report will be submitted to RWQCB by mid-fall 2016 (see Section 6.0).

5.0 QA/QC PROCEDURES

To document the quality of the data being collected, and to assess whether reported concentrations of chemicals identified through results of analytical testing are of acceptable quality, several control checks for both field and laboratory data will be performed as described in the sections below.

5.1 Field Record Keeping

Bound field logbooks will be maintained by the field supervisor and any other team members to provide a daily record of significant events, observations, and measurements during the field investigation. All entries will be signed and dated. All information pertinent to the field survey and/or sampling will be recorded in the logbooks. The logbooks will be bound, with sequentially numbered pages.

Instruments and equipment used to gather, generate, or measure environmental data will be calibrated according to manufacturer's specifications with sufficient frequency to ensure accuracy and reproducibility of results. At a minimum, monitoring equipment used in the field will be calibrated daily against a known standard. If the results show that the concentration is within 5 percent of the known standard, the equipment will be considered calibrated.

5.2 Sample Handling

All samples will be properly labeled, preserved (where appropriate), and handled in accordance with approved protocols. All laboratory analyses will be conducted by a California-certified laboratory approved for standard quality assurance and quality control procedures (QA/QC).

5.3 Field QC Samples

As a check on field sampling, QA/QC samples will be collected. Definitions for field QA/QC samples are presented below.

5.3.1 Field Duplicates

A field duplicate is defined as a second sample collected independently at the same sampling location during the same sampling event that produced the primary sample. At least 10 percent of the total daily groundwater samples for laboratory analysis will be submitted as field duplicate

samples to evaluate the precision of the sampler and the analytical laboratory. Duplicate samples will be prepared in the same manner as other samples and will be given the sample designation "D" to indicate that it is a duplicate sample. Field duplicate samples will be analyzed for VOCs and oxygenates via USEPA Method 8260B.

5.3.2 Field Blanks

Equipment blanks consist of ASTM Type II water (or equivalent) poured into the sampling device following decontamination. This blank is transferred to a sample bottle appropriate for the analysis and transported to the laboratory. Equipment blanks will be prepared when a particular piece of sampling equipment was employed for sample collection and subsequently decontaminated in the field for use in additional sampling. The equipment blank will be taken in the field by collecting a blank water rinse from the equipment in the appropriate pre-preserved container after execution of the last step of the field decontamination protocol. One equipment blank will be collected for each day that groundwater sampling occurs. Each equipment blank will be analyzed for VOCs and oxygenates via USEPA Method 8260B.

Trip blanks are used to measure potential contamination of samples by VOCs during transport. The trip blank consists of a vial filled by the laboratory with ASTM Type II water, shipped to the field, and returned to the laboratory in a cooler that contains samples for VOC analysis. A trip blank shall be included in every cooler containing samples for VOC analysis; the trip blank sample will be analyzed for VOCs and oxygenates via USEPA Method 8260B.

5.4 Data Validation and Verification

The initial data interpretation, validation, and reporting will be performed by the laboratory. Data will then be validated outside the laboratory at Level II. All data validation will be in accordance with the USEPA's Contract Laboratory Program National Functional Guidelines, dated January 2010, for both organic and inorganic data review.

5.5 Data Review

The Project Manager (PM), Project Geologist, Project Scientist, or appropriate Task Leader assigned by the PM, will initially review the laboratory data for consistency with historical Site data and among primary and duplicate samples. A review of data qualifiers assigned by the

laboratory will also be performed. If anomalies are found, the laboratory will be instructed to review the reported data and/or re-analyze certain samples. Acceptable data will then be compared to their and other applicable screening levels.

5.6 Corrective Actions

Corrective actions may be initiated if the precision or accuracy goals are not achieved. The first step in corrective action will be to instruct the analytical laboratory to examine its procedures to assess whether analytical or computational errors caused anomalous results. At the same time, sample collection and handling procedures will be reviewed to assess whether they may (also) have contributed to anomalous results. Based on this evaluation, the PM, Project Geologist, Project Scientist, or appropriate Task Leader assigned by the PM, will evaluate the laboratory Method Detection Limits (MDLs) and MRLs, the sample collection procedures, the analytical parameters, sample custody and sample documentation, and will assess whether re-analysis or re-sampling is required or whether any protocol should be modified for future sampling events.

6.0 PROJECT SCHEDULE

As requested the RWQCB, below is a detailed projected schedule of events following the submittal of this workplan. The schedule is subject to change based on final workplan approval from the RWQCB, County contracting process, permit approval, subcontractor scheduling, and other unforeseen delays regarding Site access on an actively operating Airport.

Activity	Start	Duration	End
RWQCB Workplan Review	4/18/16	4 weeks	5/13/16
Airport Access, Safety and Logistics	4/18/16	10 weeks	7/1/16
RWQCB Conditional Approval	5/13/16	---	---
Revise Workplan	5/13/16	2 weeks	5/27/16
Workplan Approval	5/27/16	3 work days	6/3/16
Contracting	6/3/16	4 weeks	7/1/16
Phase I: Contractor Health and Safety, Scoping, Scheduling, Permitting	7/5/16	3 weeks	7/22/16
Phase II: Start Groundwater Fieldwork, Lithology Boring and CPT	7/25/16	1 work week	7/29/16
Meet with RWQCB about Lithology Boring and CPT	7/29/16	---	---
Optimize CPT Groundwater Sampling Approach, Clear Boring Locations	8/1/16	1 work week	8/5/16
Phase III: CPT Groundwater Sampling	8/8/16	3 weeks	8/26/16
Groundwater Sample Analyses	7/29/16	24 hours to 2 weeks	9/9/16
Transmit Draft Groundwater Results to RWQCB	8/10/16	As available	9/12/16
Groundwater Investigation Report	9/9/16	4 Weeks	10/10/16

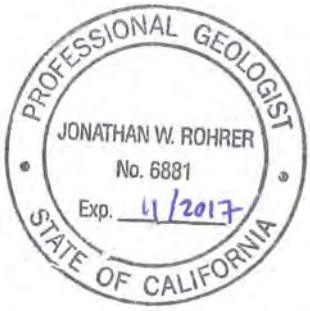
7.0 CLOSING

Roux Associates is available to answer any questions that the RWQCB may have regarding this Workplan. Please contact Kaleena Johnson at 310-879-4930, or kjohnson@rouxinc.com, or Jon Rohrer at 310-879-4921, or jrohrer@rouxinc.com.

Sincerely,

ROUX ASSOCIATES, INC.

Kaleena Johnson
Senior Scientist



Jon Rohrer, P.G., C.Hg.
Principal Hydrogeologist

8.0 REFERENCES

Beacon Geotechnical, Inc., 2009. *Percolation Testing and Log of Boring*. May 29.

Cleath, Timothy S, 1987. *County of San Luis Obispo Ground Water Study San Luis Obispo Airport Area*. November.

Coffman, 2005. Airport Master Plan Update for San Luis Obispo County Regional Airport. March.

County of San Luis Obispo, 2014. Draft Airport Land Use Plan.

County of San Luis Obispo, 2015. County of San Luis Obispo Sustainable Groundwater Proposal, Submitted Proposition 1A Grant Application. December 8. http://www.slocountywater.org/site/Water%20Resources/SGMA/

County of San Luis Obispo - Human Resources Department, 2016A. *Re: San Luis Obispo County Regional Airport, 903 Airport Drive, San Luis Obispo, CA*. January 20.

County of San Luis Obispo - Human Resources Department, 2016B. *Re: San Luis Obispo County Regional Airport, 903 Airport Drive, San Luis Obispo, CA*. February 19.

County of San Luis Obispo, 2016C. *Re: County Response to February 26, 2016 Memorandum Regarding Information Requests and Requirements for Soil Gas and Groundwater Investigation Work plans.* April 15.

County of San Luis Obispo, 2016D. Master Plan Update. http://sloairport.com/index.php?p=custom_page&page_name=Master%20Plan%20Update

Department of Water Resources (DWR), 2003. California's Groundwater: Bulletin 118.

Dibblee, Thomas W., 2006. *Geologic Map of the Pismo Beach Quadrangle San Luis Obispo County California*. April.

Doherty, 2012. The Manufacture, Use, and Supply of Chlorinated Solvents in the United States During World War II. Environmental Forensics, 13:7-26.

Environmental Data Resources, Inc. 2016.

Federal Aviation Administration - United States Department of Transportation, 2011. *Advisory Circular 150/5370-2F*. September 29.

Mead and Hunt, 2006. Drainage Study: San Luis Obispo County Regional Airport Runway 11 Extension. March.

Padre. *Second Semi-Annual 2015 Groundwater Monitoring Report, Former San Luis Obispo Tank Farm, San Luis Obispo, San Luis Obispo County, California*, dated October 2015.

Regional Water Quality Control Board - Central Coast (RWQCB), 2015. Site Cleanup Program: San Luis Obispo County Regional Airport, 903 Airport Drive, San Luis Obispo, San Luis Obispo County – Request for Workplan. November 23.

Regional Water Quality Control Board - Central Coast (RWQCB), 2016A. Site Cleanup Program: San Luis Obispo County Regional Airport, 903 Airport Drive, San Luis Obispo, San Luis Obispo County – Requirement for Groundwater Investigation Workplan. February 26.

Regional Water Quality Control Board - Central Coast (RWQCB), 2016B. Site Cleanup Program: San Luis Obispo County Regional Airport, 903 Airport Drive, San Luis Obispo, San Luis Obispo County – Response to San Luis Obispo County April 15, 2016 Submittals for the Investigation of Trichloroethylene on the Airport Property. May 13.

SAIC, 1997A. San Luis Obispo Airport, DERP-FUDS Site Inspection. October 2.

SAIC, 1997B. Site Inspection Photographs. November.

SDWIS, 2016. (Safe Drinking Water Information System). https://sdwis.waterboards.ca.gov/, Accessed April 13.

USACE, 1999. Findings of Fact for DERP-FUDS Site No J09CA708800, San Luis Obispo County Airport, September 28.

USEPA, 2016 (United States Environmental Protection Agency). https://www.epa.gov/dwreginfo/information-about-public-water-systems, Accessed April 13.

FIGURES

1. Site Vicinity Map
2. Site Map
3. Buckley Road Area - Properties of Interest
4. Regional Geology
5. Aerial Imagery (Figures 5A through 5L)
6. Proposed Groundwater Sample Locations

C:\Users\pfarrell\Desktop\SLO_GIS\Graphics\AerialMaps\Figure1-SiteVicinty.mxd

Image Source: ESRI World Imagery 2016

Legend

Site Boundary

N

0.25 0 0.25 0.5 Miles

Title:

SITE VICINITY MAP

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE 1
Prepared by: PDF	Scale: 1:20,000	
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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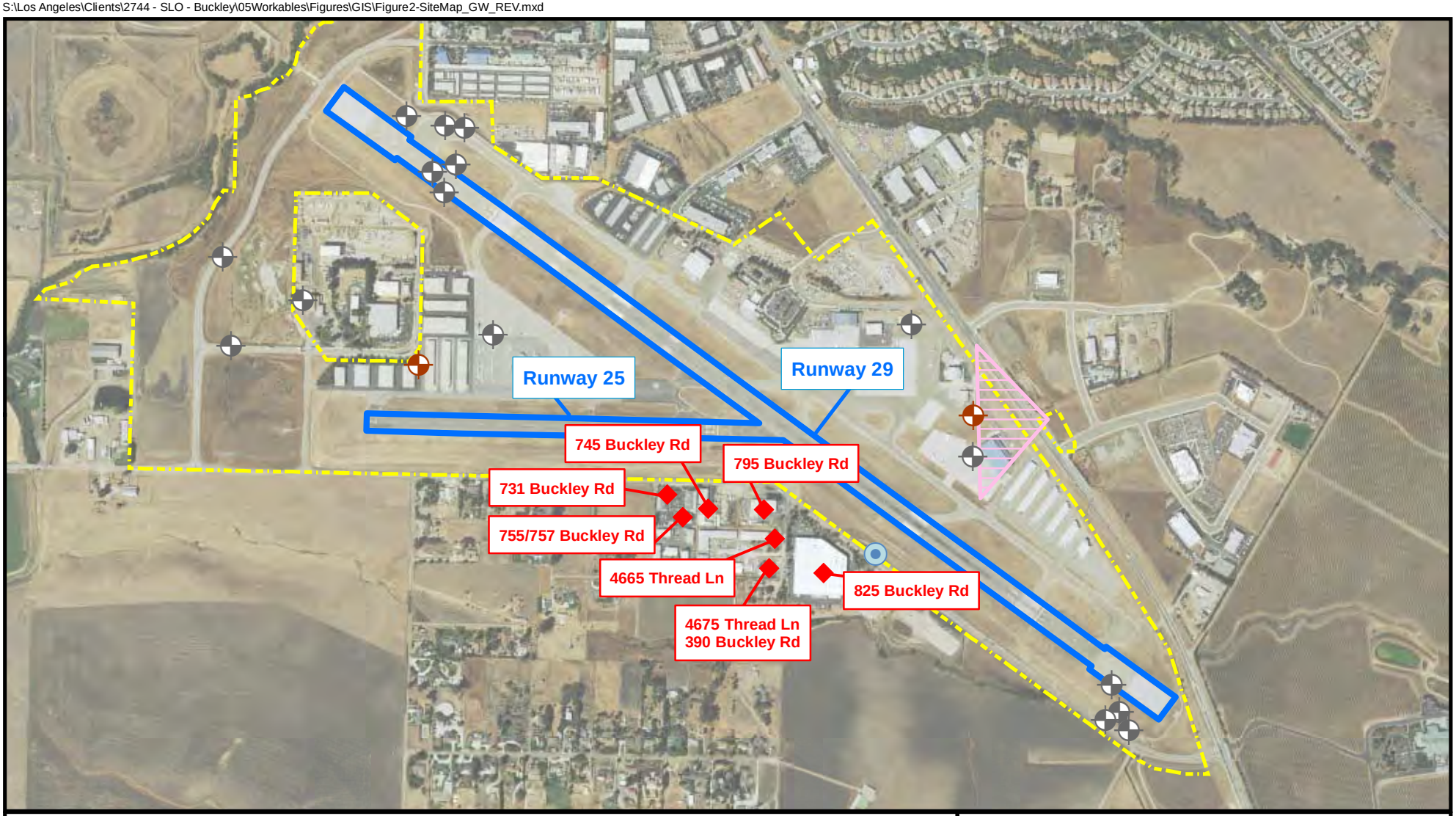

Image Source: ESRI World Imagery 2016

Legend

- Site Boundary
- Present Extent of Runways
- Approximate Location of Former Leach Field (Cleath, 1987)
- Approximate Location of Historical Groundwater Well (Cleath, 1987)
- Existing Groundwater Monitoring Well
- Buckley Road Drainage Outlet

N

0.1 0 0.1 0.2 Miles

Title:

SITE MAP

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/15/2016	FIGURE 2
Prepared by: PDF	Scale: 1:12,000	
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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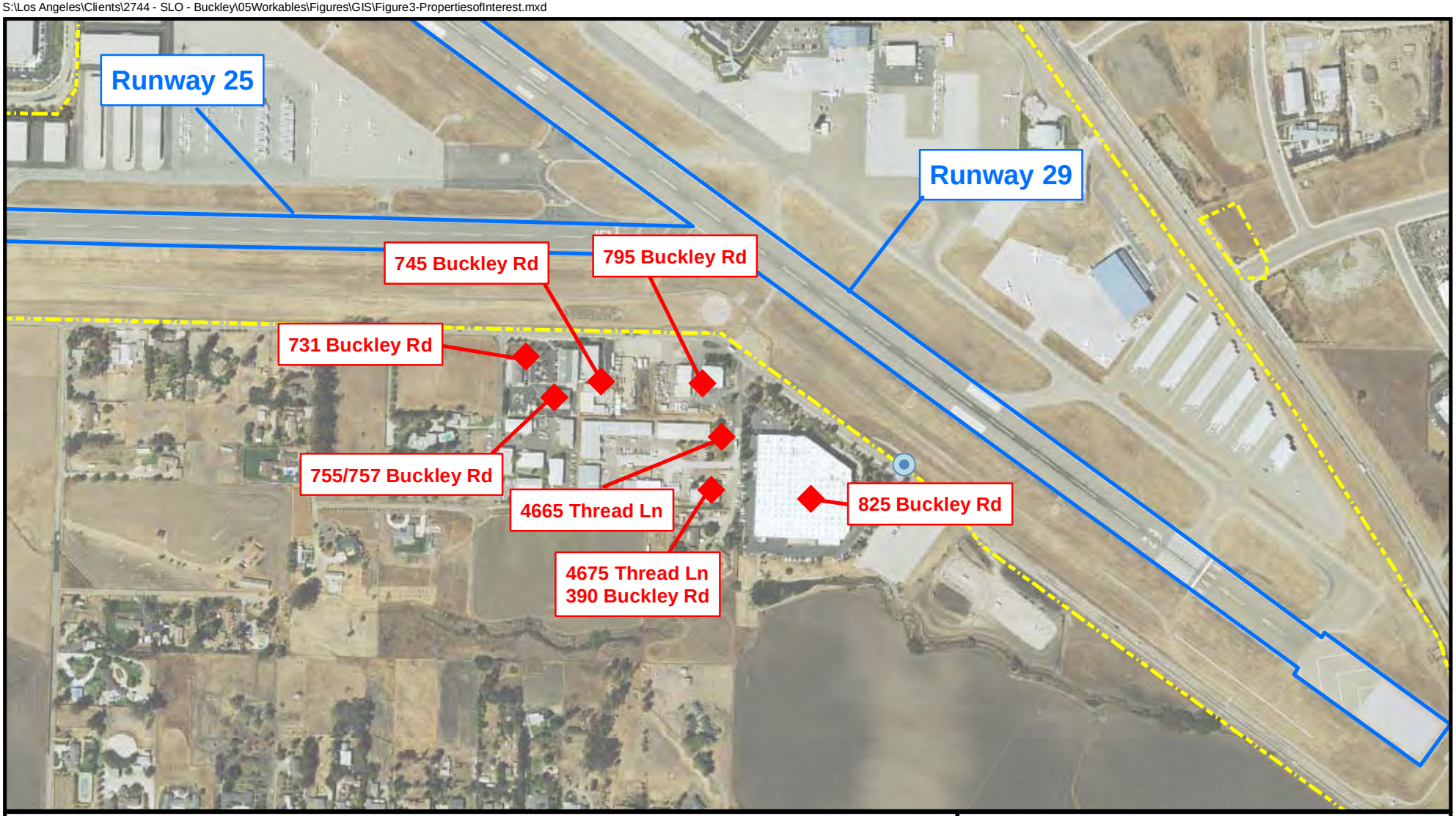

Image Source: ESRI World Imagery 2016

Legend

- Site Boundary
- Present Extent of Runway
- Buckley Road Drainage Outlet

N

0.1 0 0.1 0.2 Miles

Title:

BUCKLEY ROAD AREA
PROPERTIES OF INTEREST

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/15/2016	FIGURE 3
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Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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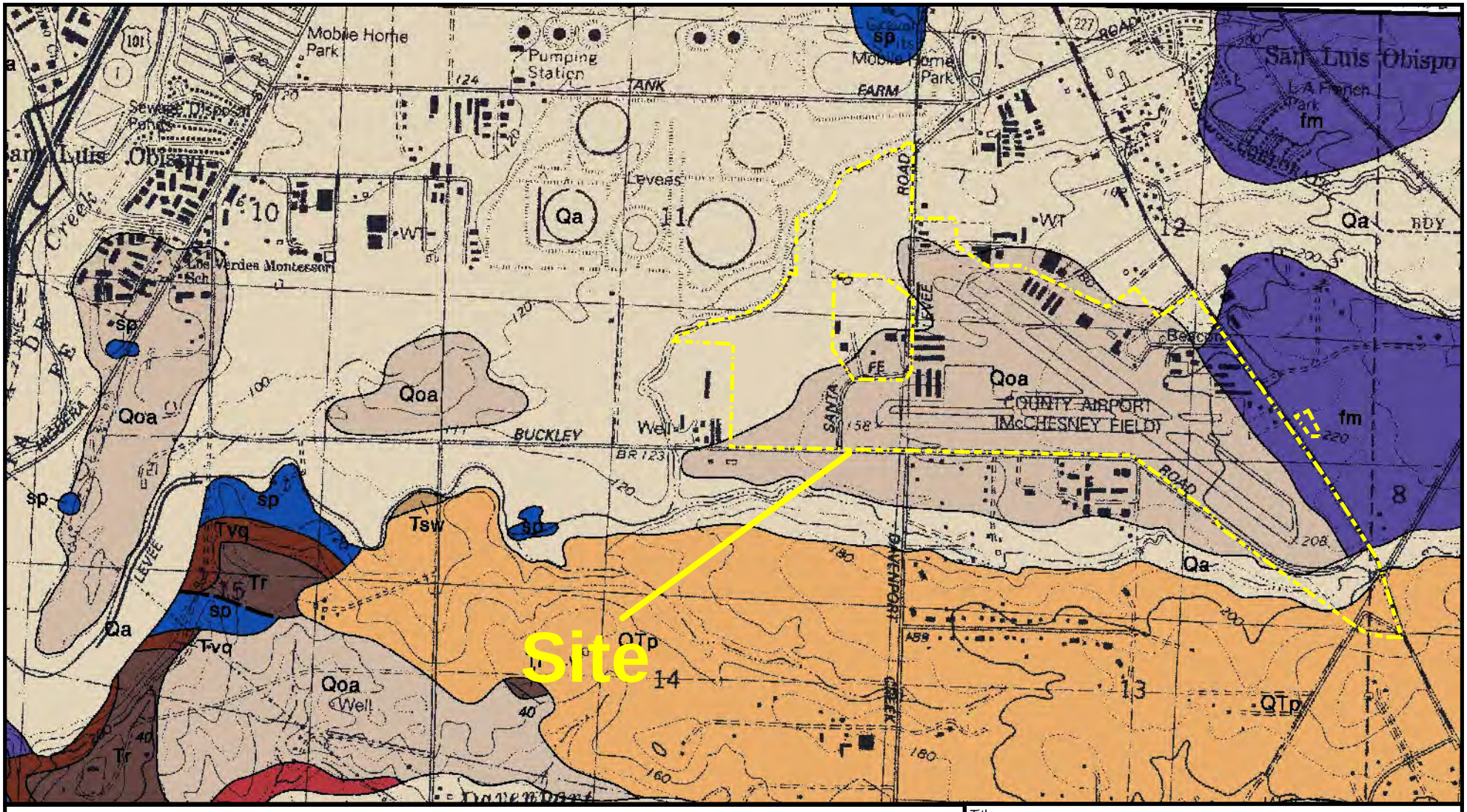

Image Source: Dibblee Pismo Beach Map (DF-212) 2006

Legend

- Site Boundary
- Qa: Surficial sediments
- QTp: Paso Robles Formation
- Qoa: Older Alluvium
- fm: Fransiscan Rocks

N

0.25 0 0.25 0.5 Miles

Title:

REGIONAL GEOLOGY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE 4
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Project Mgr: KJ	Office: LA	
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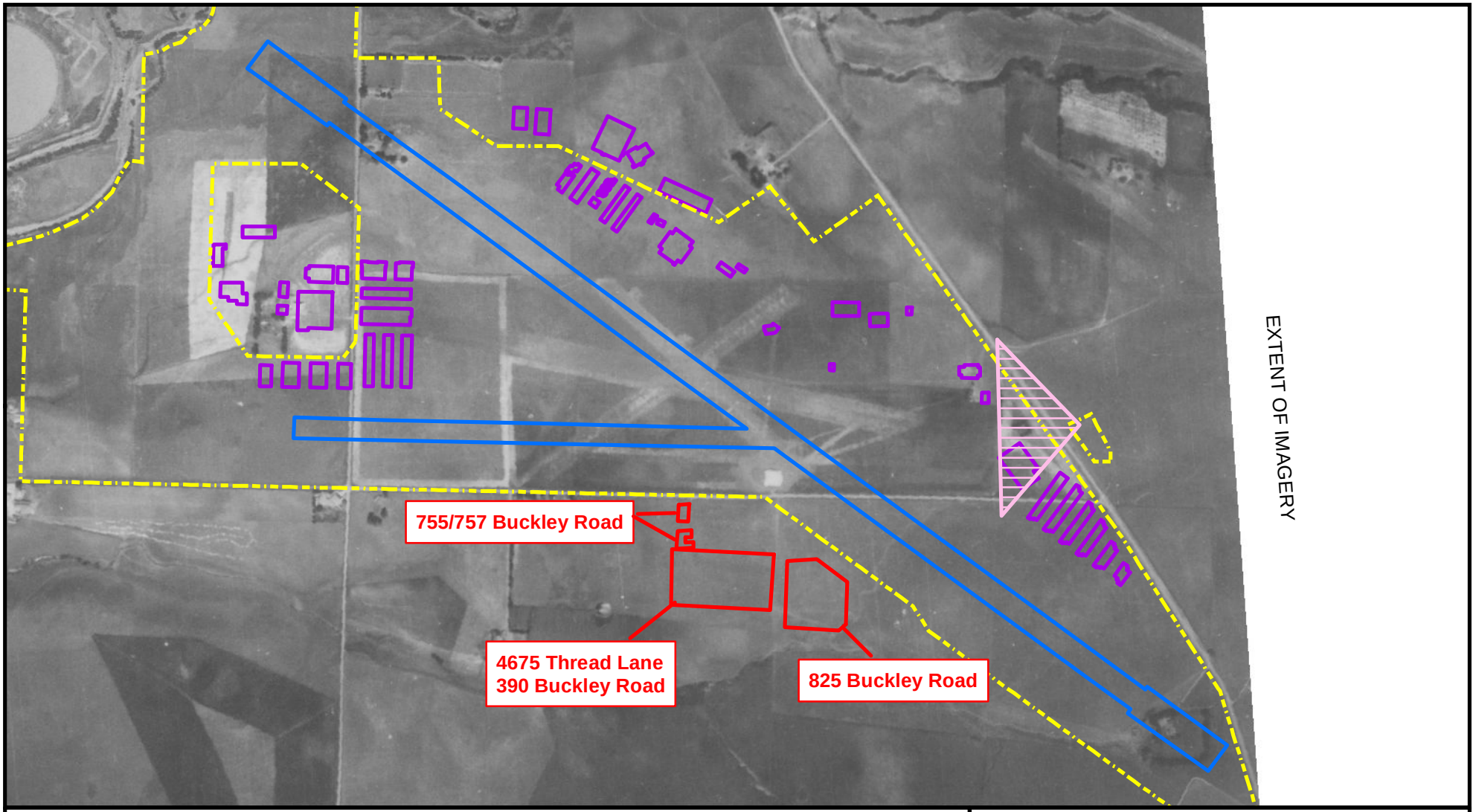

Image Source: http://gis.slocounty.ca.gov/arcgis/rest/services/Aerials

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1939 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5A**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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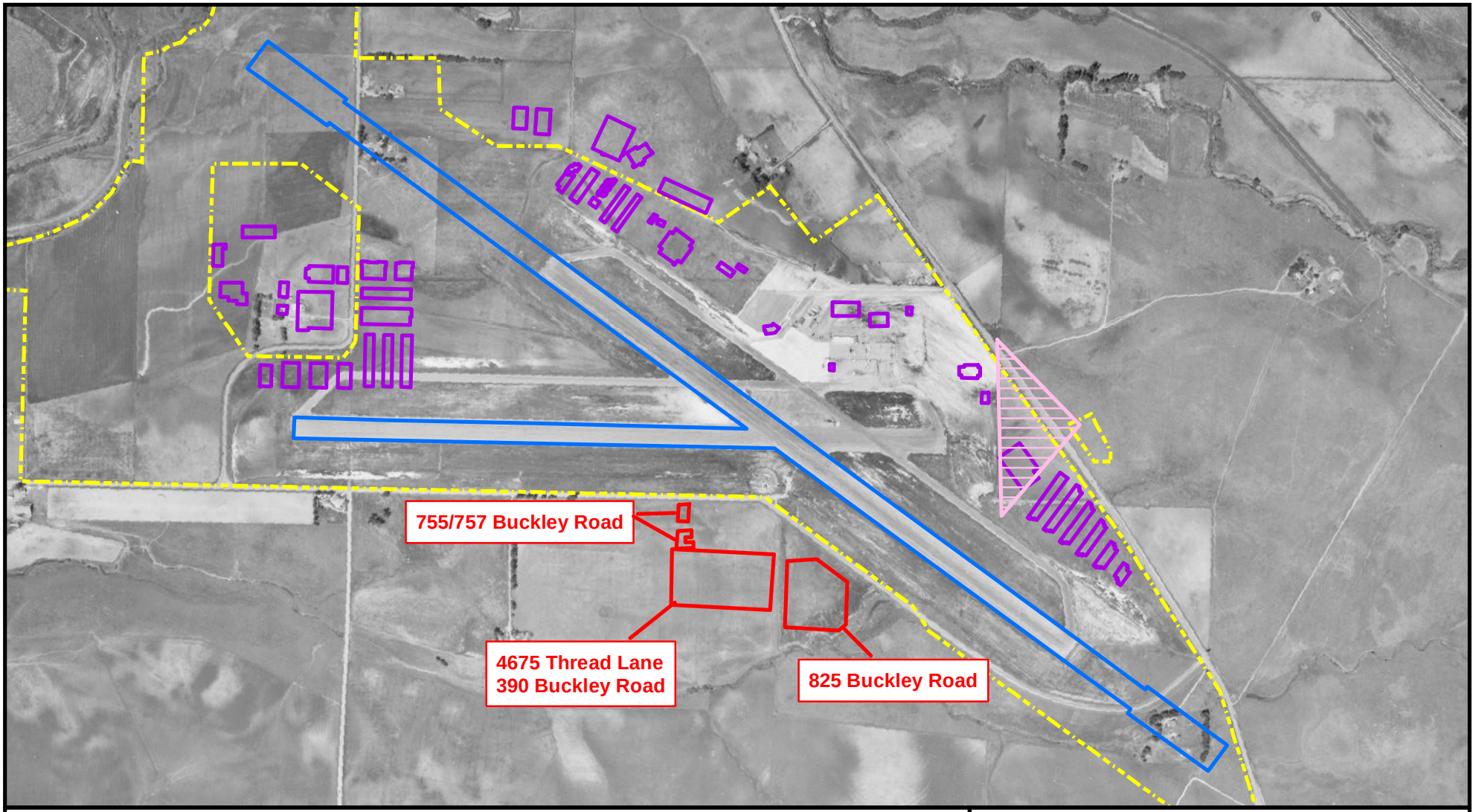

Image Source: http://gis.slocounty.ca.gov/arcgis/rest/services/Aerials

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1949 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5B**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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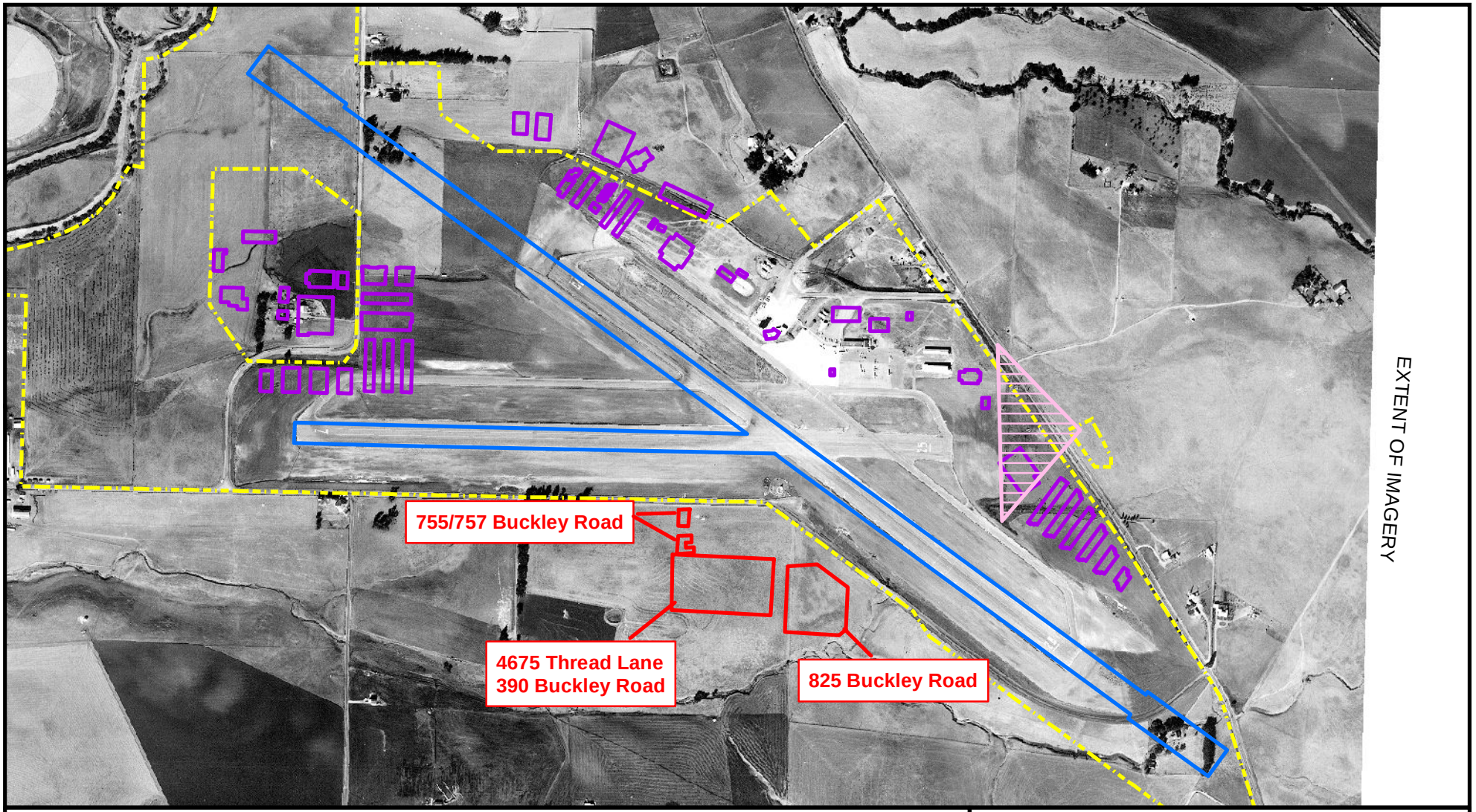

Image Source: Environmental Data Resources-Requested March 21, 2016

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1959 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
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Project Mgr: KJ	Office: LA	
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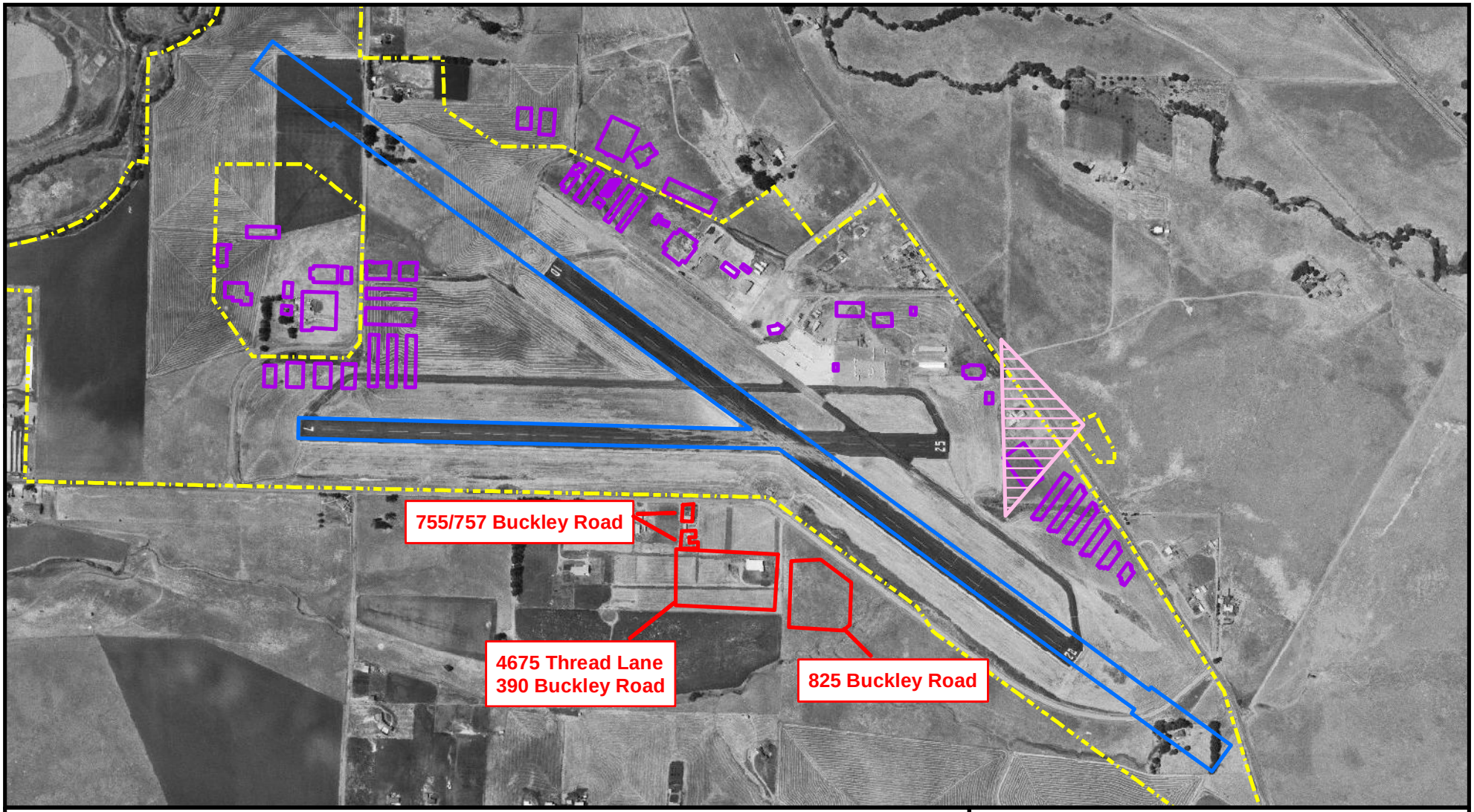

Image Source: United States Geological Survey

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1963 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
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Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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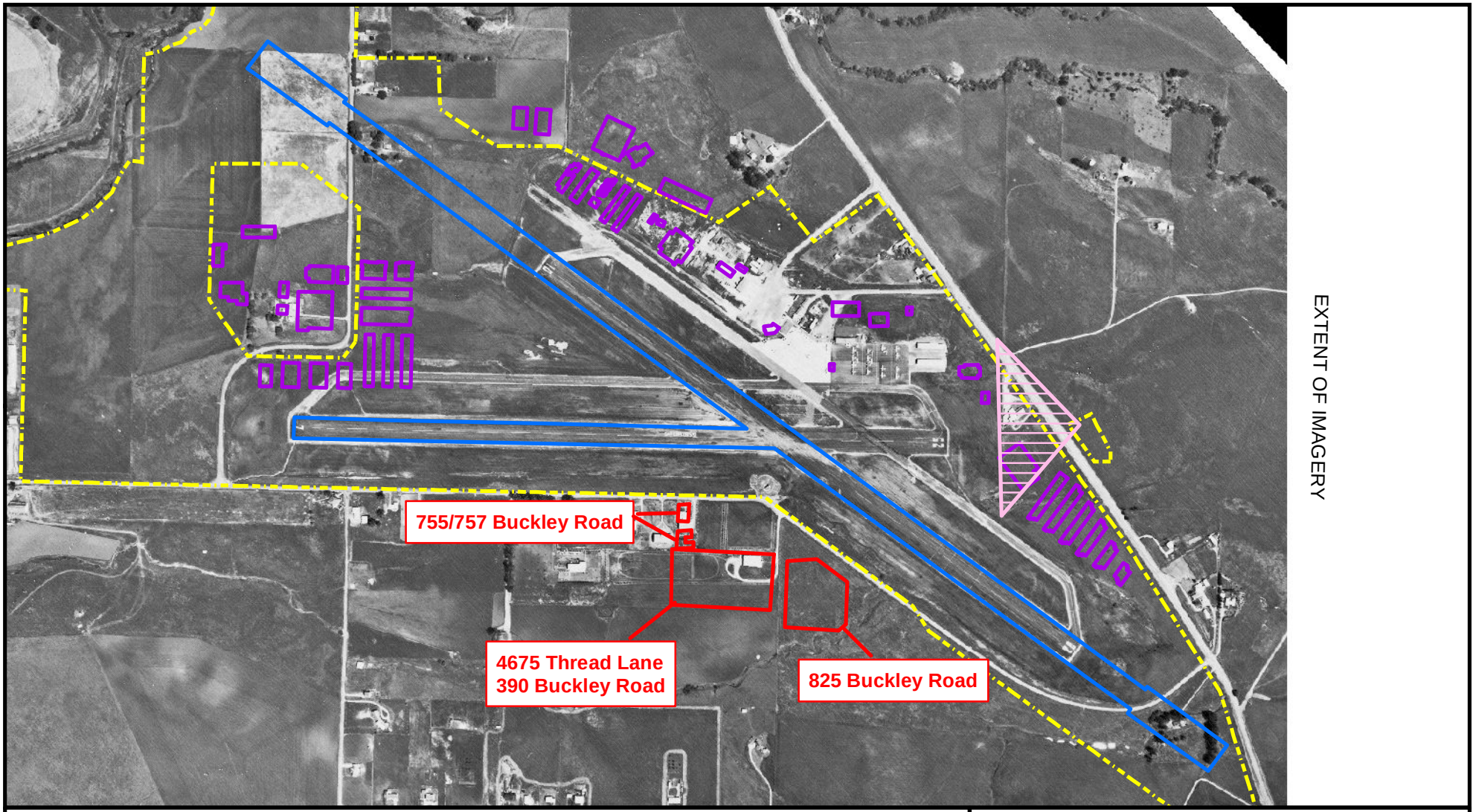

Image Source: Environmental Data Resources-Requested March 21, 2016

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1965 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5E**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

C:\Users\pfarrell\Desktop\SLO_GIS\Graphics\AerialMaps\Figure5F-Aerial1972.mxd

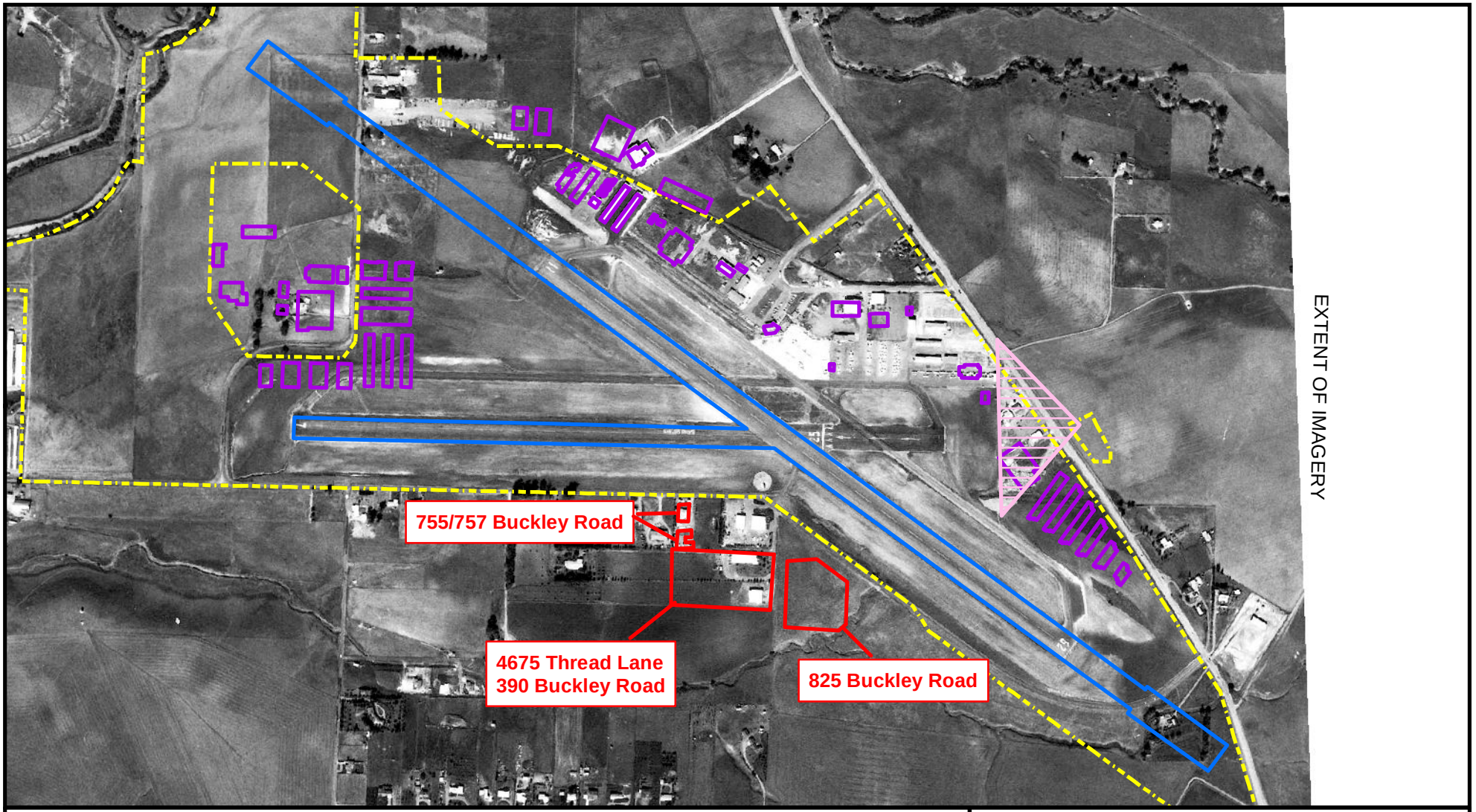

Image Source: Environmental Data Resources-Requested March 21, 2016

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1972 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5F**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

C:\Users\pfarrell\Desktop\SLO_GIS\Graphics\AerialMaps\Figure5G-Aerial1978.mxd

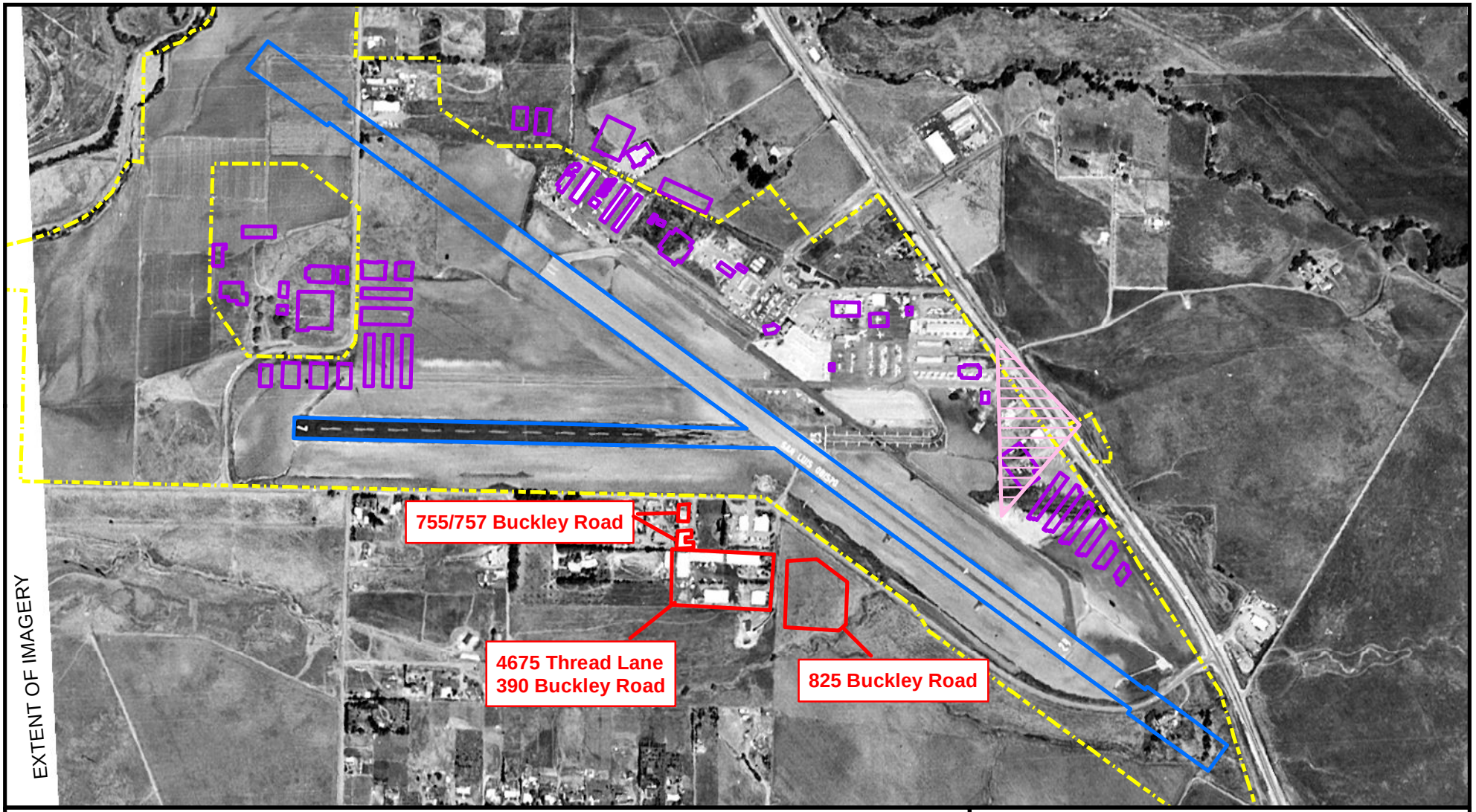

Image Source: Environmental Data Resources-Requested March 21, 2016

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1978 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5G**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

C:\Users\pfarrell\Desktop\SLO_GIS\Graphics\AerialMaps\Figure5H-Aerial1987.mxd

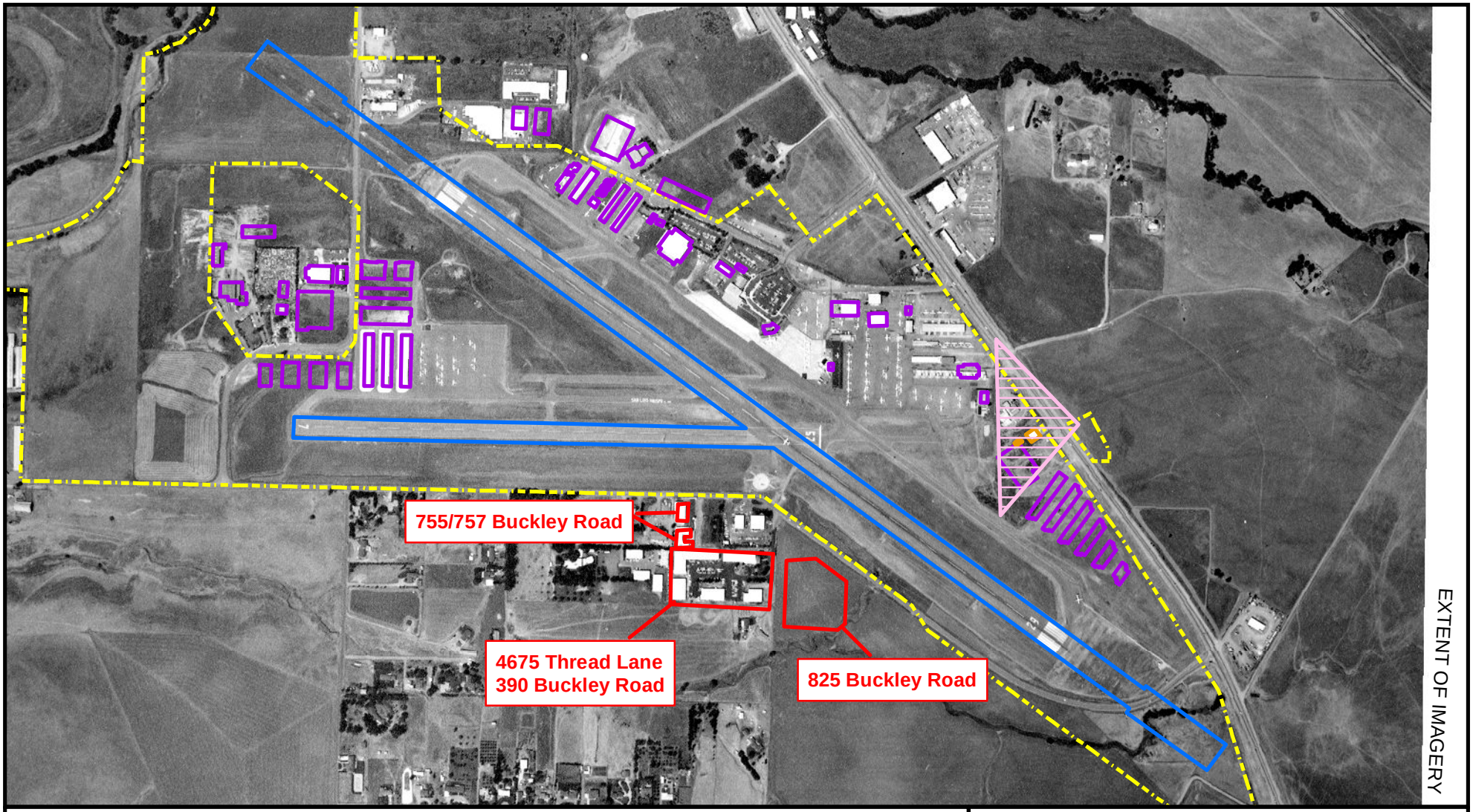

Image Source: Environmental Data Resources-Requested March 21, 2016

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1987 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

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Environmental Consulting & Management

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Prepared by: PDF	Scale: 1:10,542	**5H**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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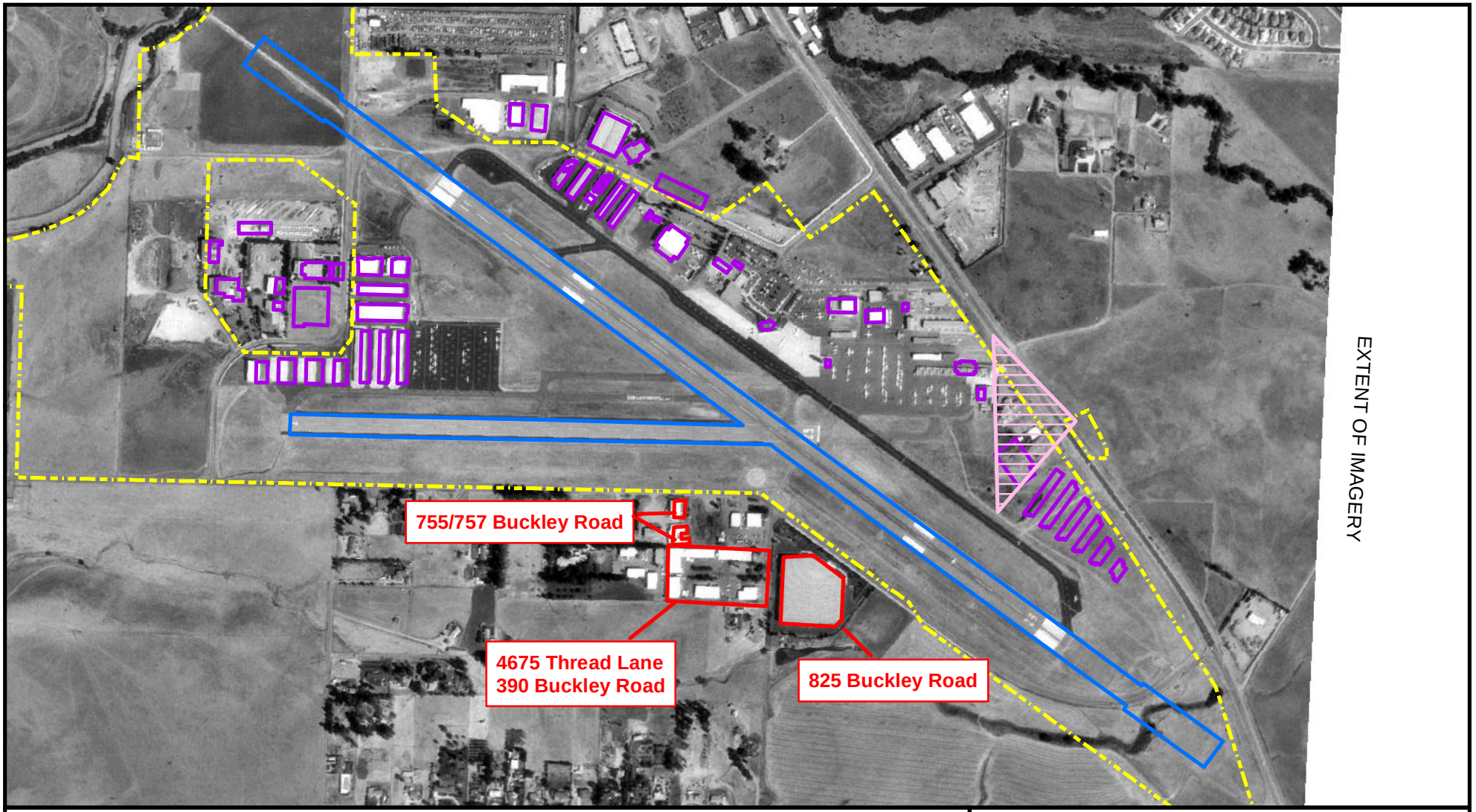

Image Source: Environmental Data Resources-Requested March 21, 2016

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

1994 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5I**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

C:\Users\pfarrell\Desktop\SLO_GIS\Graphics\AerialMaps\Figure5J-Aerial2007.mxd

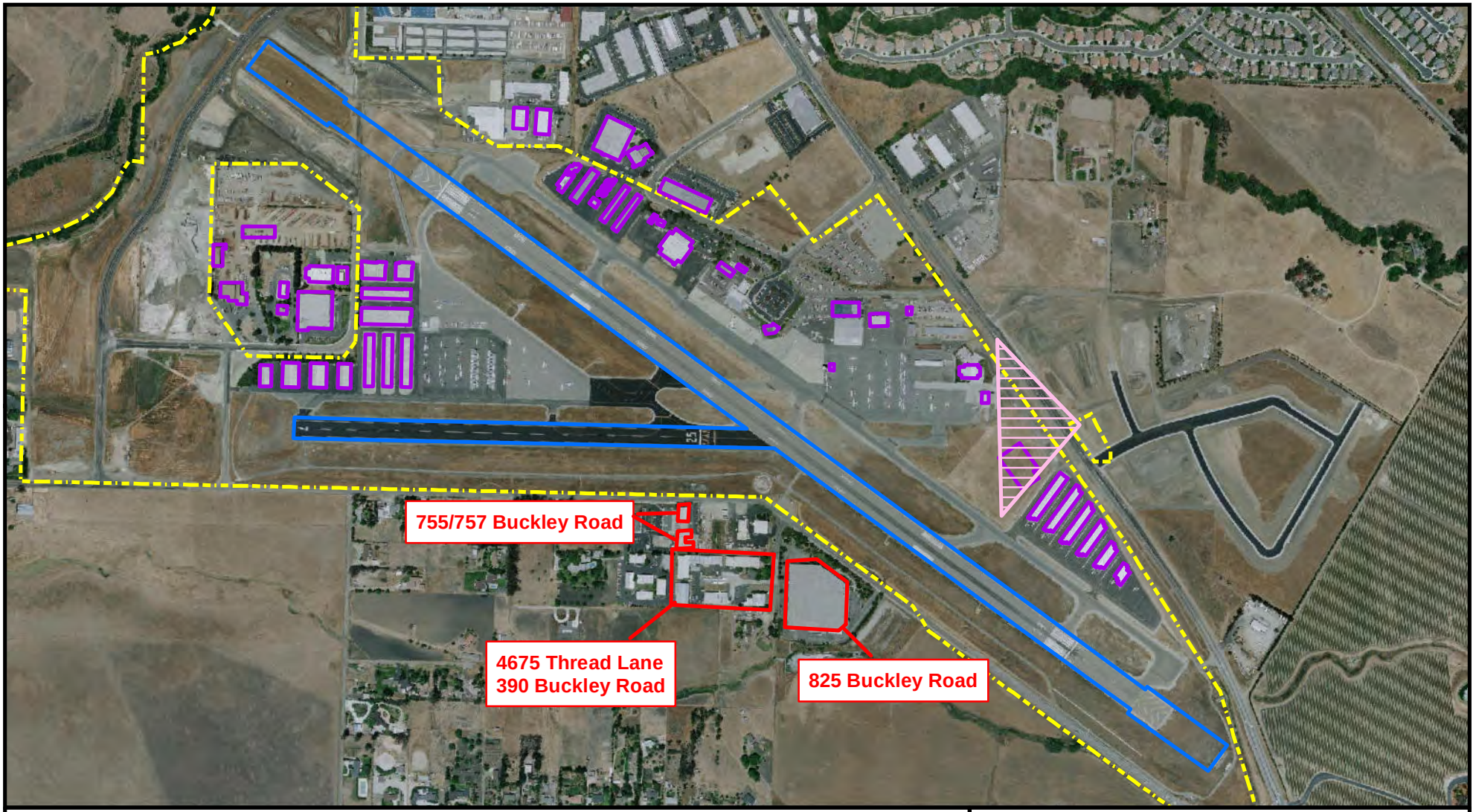

Image Source: http://gis.slocounty.ca.gov/arcgis/rest/services/Aerials

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

2007 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5J**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

C:\Users\pfarrell\Desktop\SLO_GIS\Graphics\AerialMaps\Figure5K-Aerial2011.mxd

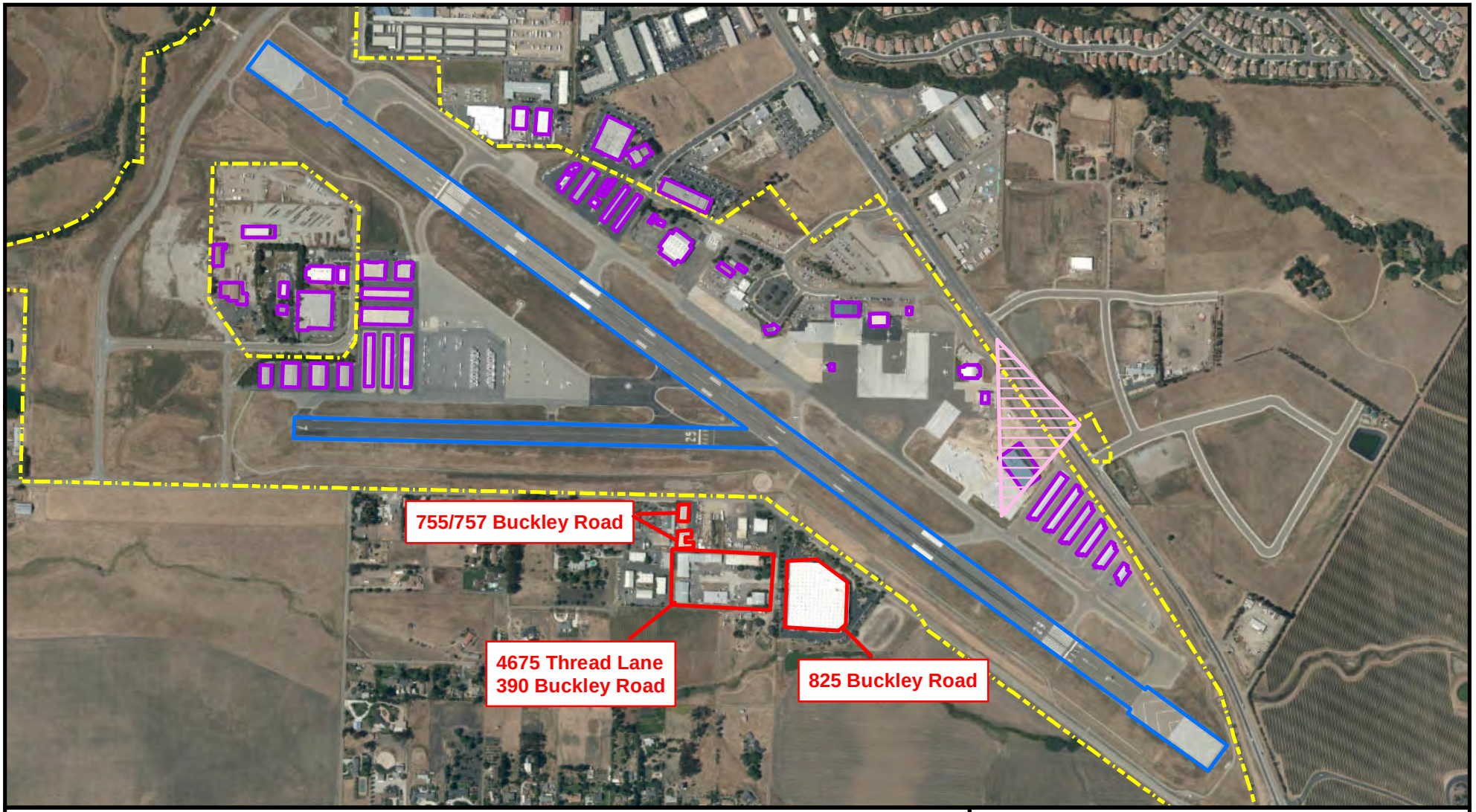

Image Source: http://gis.slocounty.ca.gov/arcgis/rest/services/Aerials

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

2011 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5K**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

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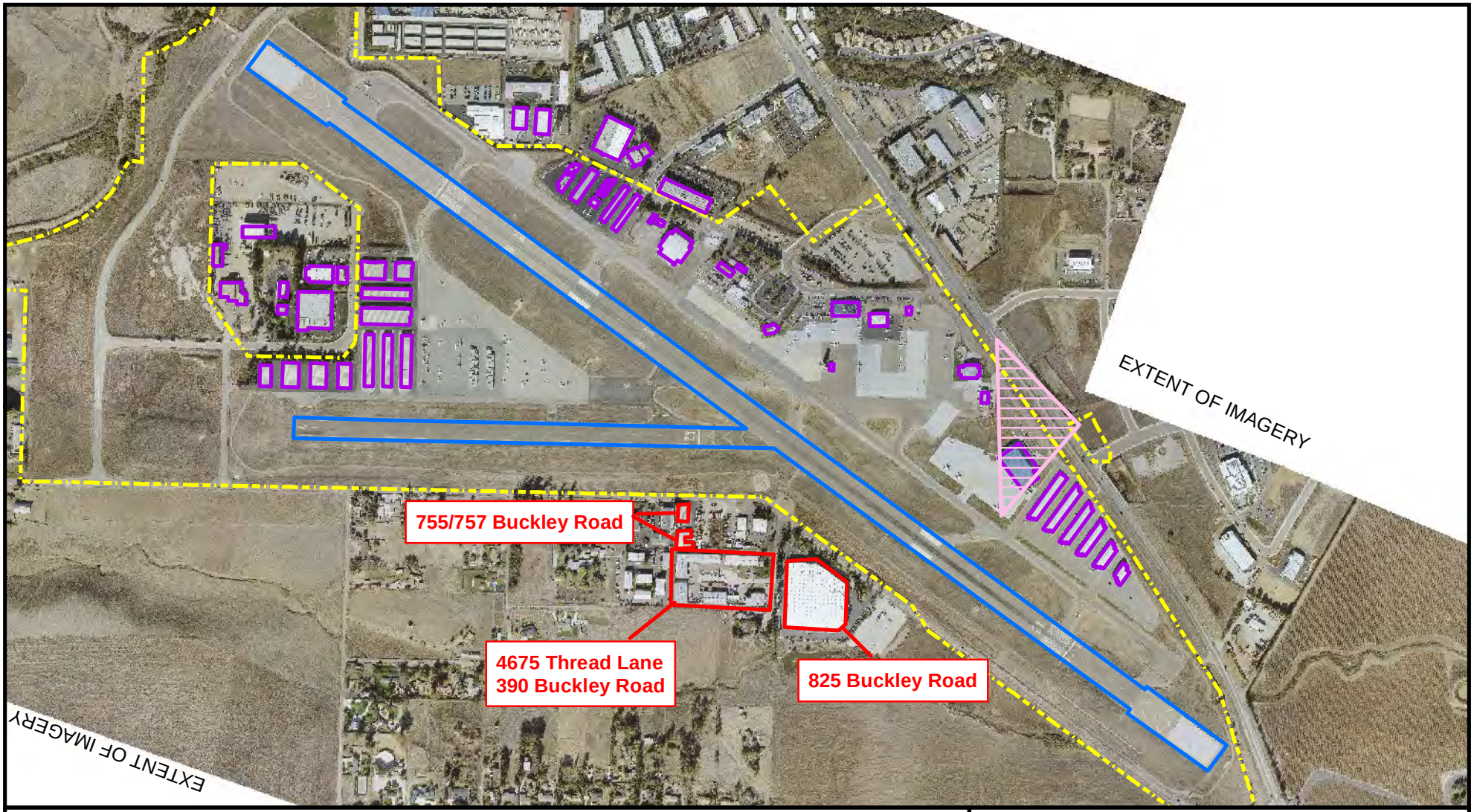

Image Source: http://gis.slocounty.ca.gov/arcgis/rest/services/Aerials

Legend

- Site Boundary
- Present Extent of Runway
- Present Building Footprints
- Approximate Location of Former Leach Field (Cleath, 1987)

N

0.1 0 0.1 0.2 Miles

Title:

2014 AERIAL IMAGERY

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 4/14/2016	FIGURE
Prepared by: PDF	Scale: 1:10,542	**5L**
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

S:\Los Angeles\Clients\2744 - SLO - Buckley\05Workables\Figures\GIS\Figure6-PropposedGWLocations-GW_revise.mxd

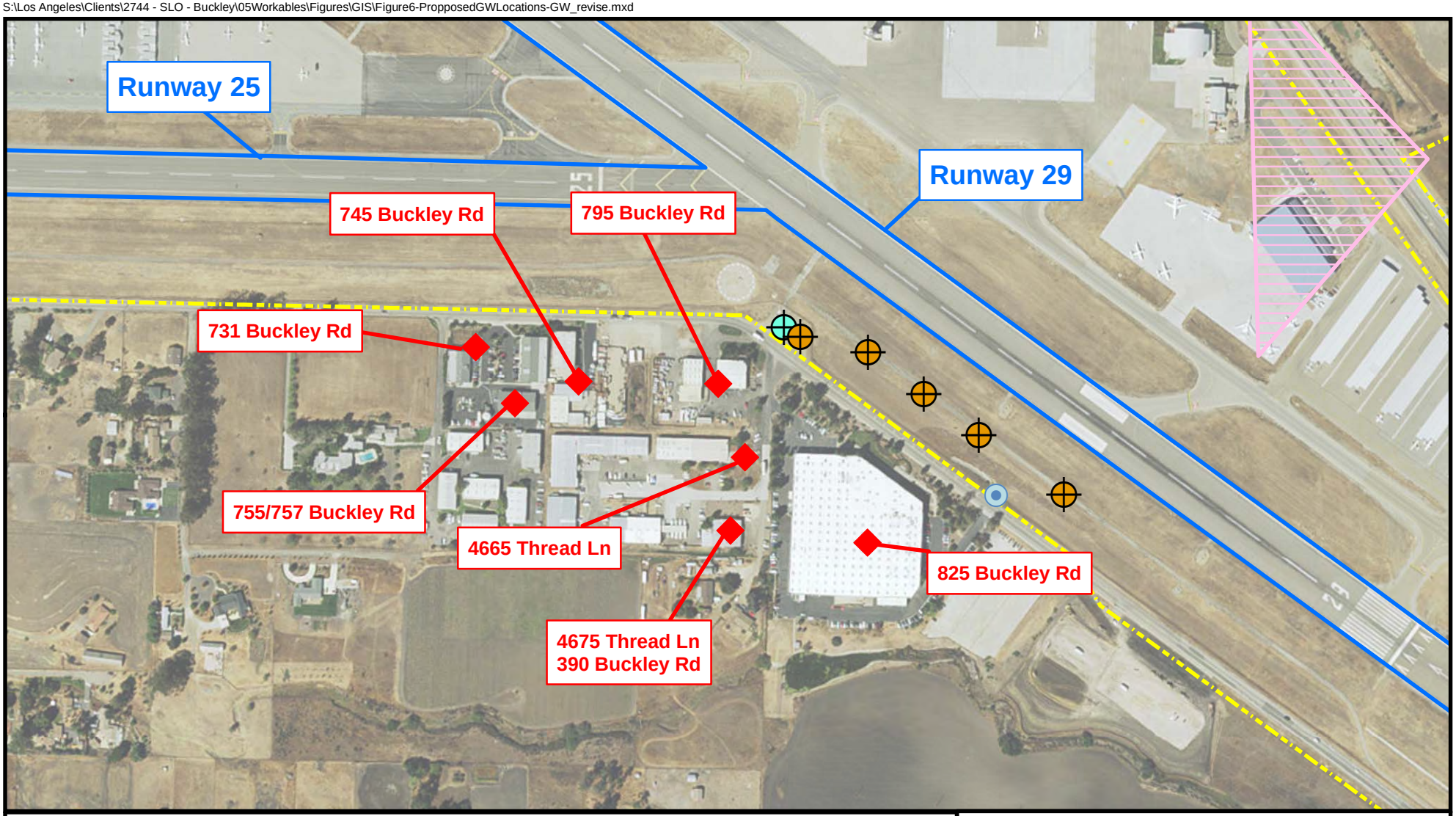

Image Source: ESRI World Imagery 2016

Legend

- Cone Penetration Testing (CPT) Locations
- Sonic Drilling Location
- Buckley Road Drainage Outlet
- Site Boundary
- Present Extent of Runway

N

400 0 400 800 Feet

Title:

PROPOSED GROUNDWATER SAMPLE LOCATIONS

SAN LUIS OBISPO, CALIFORNIA

Prepared For:

COUNTY OF SAN LUIS OBISPO

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: PDF	Date: 5/26/2016	FIGURE 6
Prepared by: PDF	Scale: 1:4,800	
Project Mgr: KJ	Office: LA	
File No: F(AL)	Project: 2744.0001L001	

APPENDICES

A. Aerial Photographs (PROVIDED ELECTRONICALLY)
B. Topographic Maps
C. Surface Drainage Maps
D. Airport FUDS Documentation
- **D.1: 1999 DOD/USACE Findings of Fact**
- **D.2: 1997 SAIC Site Inspection Memorandum**
- **D.3: 1997 SAIC Site Inspection Photographs**
- **D.4: 2012, Doherty Paper, RE: Solvent Use During World War II**

E: Geotechnical Boring Log for 390 Buckley Road
F: DTSC Manifest Information for Dolphin Shirt, Noll and Strasbaugh
- **F.1: Manifest Summaries from DTSC**
- **F.2: Dolphin Shirt TCE Manifests**
- **F.3: Noll TCE Manifest**
- **F.4: All Manifests Obtained, Sorted by Date**

G: City Directory

ALL APPENDICES PREVIOUSLY PROVIDED IN APRIL 15, 2016 SUBMITTAL