

Signs in the median area shall be placed midway between curbs. These signs shall be mounted no closer than six (6) inches to, and no farther than six (6) feet from, the edge of the traveled way which the sign faces.

The minimum mounting height for signs shall be seven (7) feet measured from the bottom of the sign to the near edge of the pavement, except as otherwise noted below, or as specifically approved by the Engineer.

The height to the bottom of a secondary sign mounted below a primary sign shall be a minimum of six (6) feet measured from the bottom of the sign to the near edge of the pavement.

In areas not subject to pedestrian traffic, the Chevron (W81) and one way signs (R10) shall be mounted at a height of three (3) feet, measured from the bottom of the sign to the near edge of the pavement.

4102.13 Quality Test. The Contractor will be charged for the cost of all Quality Control Tests - i.e., compaction, sand equivalent, R. value, gradation, etc. - where the test results do not meet the required specifications.

Testing of aggregate bases shall be performed for every 500 cubic yards or one day's production, whichever is smaller. Testing of asphalt concrete shall be performed for every 500 tons or one day's production, whichever is smaller. Testing of Portland Cement Concrete shall be performed for every 300 cubic yards or one day's production, whichever is smaller.

4102.14 Adjusting Utility Structures to Grade. Work includes adjusting to finish grade any and all new or existing manholes, sewer cleanouts, water valve boxes, survey monument boxes, etc., which are included in the contract.

The Contractor shall mark the location of all structures to be adjusted to grade and shall be responsible for the location after paving operations are completed.

After surfacing or resurfacing is completed, the Contractor shall construct or reconstruct the structures to grade as shown on the plans.

Payment for adjusting structures to grade shall be by the unit price bid per each and shall be full compensation for adjusting and furnishing new or salvaging existing manhole frames and covers, water valve boxes, sewer clean out frames and cover, and monument covers.

4102.15 Permanent Surfacing. Permanent surfacing shall not be constructed until the compaction requirements are satisfied. The wearing surface for permanent surfacing shall be replaced "in kind", but in no case shall the new surfacing be less than two (2") inches thick for asphalt concrete or less than six (6") inches thick for Portland cement concrete. A permanent surface shall be installed no later than ten (10) calendar days from completion of backfill.

4102.16

Slurry Seal. Slurry seal shall be Type II and shall conform to the provisions in Section 37-2, "Slurry Seal", of the Standard Specifications and those special provisions.

At least five (5) days prior to the slurry seal operation, the Contractor shall hand out written notices to all local residents and/or businesses advising them of the operation and road and/or lane closures. The notices shall include the type of work, limits, date and the time period of road closure and/or no parking. Details of the notice shall be reviewed and approved by Director of Engineering at least five (5) working days prior to posting and/or delivery. "No parking" signs shall be placed behind the curbs at least 48 hours in advance of work and shall include date and time.

The Contractor's failure to comply with the requirements of this section will be sufficient cause for the Engineer to suspend work at no cost to the City.

In addition to providing the mix design, the Contractor shall provide the Engineer with a Certificate of Compliance certifying that the materials meet the specifications.

The Contractor shall replace existing striping and/or pavement markers covered by the slurry operation at the Contractor's expenses.

Slurry seal shall be measured by and paid for per square yard.

Slurry seal shall not be placed when the atmospheric temperature is below 70 degrees F., during unsuitable weather, or after 1:00 p.m.

Before placing the slurry seal, the pavement surface shall be cleaned by sweeping, blowing or other means necessary to remove all loose particles of paving, oil dirt and all other extraneous material.

Immediately prior to commencing the slurry seal operations, all surface metal utility covers (including survey monuments) and pavement markers shall be protected with appropriate adhesive and oiled or plastic paper. No adhesive material shall be permitted to cover, seal or fill the joint between the frame and cover of the structure. Covers and markers are to be uncovered and cleaned of slurry material by the end of the same work day.

If necessary, the Contractor may pre-wet the existing surface immediately prior to the application of the slurry seal with water at the rate of 0.05 to 0.10 gallon per square yard of surface as approved by the Engineer.

Detail 44

DEPARTMENT OF WATER
CONSTRUCTION STANDARDSWATER SERVICESI. MATERIALS

- A. Corporation stops shall be one of the following patterns, complete with coupling nut:

1. McDonald E-4701
2. James Jones J-1500
3. Mueller H-15000
4. Hays 5200

- B. Pipe shall be type "K" soft copper tubing. The size and location are as shown on the plans or as directed by the Engineer.

All the contractor's option water service pipe may be flexible plastic tubing conforming with ASTM D2666 and AWWAC902. Plastic service tubing shall be minimum 160 PSI, SDR 13.5 polybutylene PB2110 as manufactured by Wesflex Co., Richmond, CA or approved equal. Only approved brass or copper compression type fittings and stainless steel compression tubes shall be used with plastic tubing.

- C. Curb stops shall be the following patterns or approved equal:

1. Mueller H-14270 (3/4" to 2")
2. Mueller H-14280 for dual services where H-15530 bronze 1/4 bends are installed.

- D. Meters - Neptune meter Co. - Triden, split case, with standard concrete meter box, size as specified in plans.

- E. Meter boxes shall be equal to Brooks Products, Inc., boxes as follows:

2" service - Box #65 with #65-S cover and #65-S lid, or when installed in driveways, a steel cover and #65 cast iron removable lid.

1 1/2" service - Box #38 with #38-S cover and lid, or when installed in driveways, a steel cover and #38 cast iron removal lid.

1" service - Box #37 with one (1) piece cover, or when installed in driveways, #37 - 1 piece cast iron cover.

3/4" service - Box #36 with one (1) piece cover.

- F. All service clamps shall have corporation stop threads. All bronze service clamps shall be Smith Blair 321, Rockwell 310 or equal. Ductile iron service clamps shall be Romac hylon covered ductile iron with stainless steel strap, nuts and bolts. Ductile iron castings on service

clamps shall be high tensile ductile (nodular) iron ASTM 536-71 covered by black hylon fused coat approximately 10 - 12 mils thick with approximate dielectric strength of 1000 v/mil. Straps for ductile iron clamps shall be stainless steel band 2" wide. Nuts, bolts and washers shall be stainless steel. Nuts and bolts shall be teflon coated. All welding shall be consistent with corrosion proof joining of stainless steel. All stainless steel shall be Type 304 (18-8) or better.

Gaskets shall be Virgin SBR compounded for water service.

II. CORPORATION STOP INSTALLATION

The water main shall be tapped or the service saddle installed at a position perpendicular to the axis of the main and 45 degrees to the horizontal at a location as nearly opposite of the curb stop location as possible.

A single strap service clamp with corporation stop threads shall be used on all 1" to 1-1/2" services from A.C.P. mains and a double strap service clamp shall be used for 2" services.

The cast iron main shall be tapped with an approved type combination 3/4" or 1" diameter drilling and tapping machine equipped with a Mueller thread tap.

The drill and tap shall be properly lubricated during the drilling and tapping process to insure true, clean cut threads.

Prior to threading the corporation stop into the main, the treads of the stop shall be thoroughly coated with an approved type thread lubricant.

The corporation stop shall be turned to a final position which will prevent any leakage or weeping and which will locate the operating key above the horizontal.

III. INSTALLATION OF COPPER TUBING

Copper tubing shall be installed beneath all sidewalk, curb, gutter and roadway areas by means of boring. In the event that excavation of any sidewalk, curb, gutter or roadway area becomes necessary, all such excavation shall be backfilled with sand, or other approved granular material, and thoroughly water tamped. The use of excavated material for backfill will not be permitted.

In locations where sidewalks are adjacent to the curb the copper tubing shall be located a minimum of 42" below the finished top of sidewalk at the curb line, and 36" below the finished roadway surface at the water main. When the sidewalk is not adjacent to the curb, the tubing shall be located 42" below the top of the curb at the curb line.

The diameter of the drill to be used shall be no larger than is necessary to provide sufficient clearance for the copper tubing.

Prior to inserting the copper tubing the end shall be plugged in a manner that will prevent any material from entering the pipe.

When installing the copper tubing, care shall be taken to prevent kinking, flattening, or in any other way damaging the tubing.

Between the side of the water main trench and the corporation stop an "S" type curve shall be introduced into the tubing in order to provide flexibility between the service and the water main. Extreme care shall be exercised in the bending operation to prevent kinking or flattening the tubing.

IV. CONNECTION OF COPPER TUBING TO CORPORATION STOP

The coupling on the corporation stop shall be removed and the end of the copper tubing inserted through the stop. The end of the tubing shall be flared by the use of an approved type flaring tool. Care shall be taken to provide a flare which will securely fasten the copper tubing to the stop. Threads on the corporation stop shall be lubricated with an approved type thread lubricant. When the tubing is connected there shall be no strain exerted by the tubing on the corporation stop.

V. CONNECTION OF COPPER TUBING TO CURB STOP

The copper tubing shall be cut to such a length as will locate the curb stop back of the sidewalk, or back of the curb if sidewalks are not adjacent to the curb. The curb stop shall be connected to the copper tubing in the same manner as outlined in Section IV. When the curb stop has been connected, the operating key shall be upright and the axis through the stop perpendicular to the edge of the sidewalk.

VI. FLUSHING AND ADJUSTING

When the service has been completely connected, water from the main shall be flushed through the service with the operating key on the corporation and curb stops in a maximum open position.

All connections shall be thoroughly inspected and wiped clean of any dirt or mud in order that any "weeping" may be detected. Any and all leaks must be completely stopped and the Engineer notified before backfilling either end of the service.

VII. SERVICE TRACER WIRE

Where flexible plastic tubing is used for water services, the contractor shall furnish and install a twelve (12) gauge copper wire in the trench with and adjacent to the service pipe. The end of the wire shall be exposed in the meter box and the other end (metal-to-metal) connected to the tracer wire in the water main trench.

Tracer wire shall be insulated and all splices shall be made (metal-to-metal) with brass mechanical connector.

Flexible plastic water service tubing shall not be used in areas where soils are contaminated with petroleum based products or where the intended use of the site may so contaminate the soil.

watersrv

AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION

THIS AGREEMENT, entered into between the State of California, Department of Fish and Game, hereinafter called the Department, and Jennifer Barrett representing the City of Petaluma, of Petaluma, State of Calif., hereinafter called the operator, is as follows:

WHEREAS, pursuant to Division 2, Chapter 6 of California Fish and Game Code, the operator, on the 14 day of April, 1995, notified the Department that he intends to substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of, the following water: Adobe creek, unnamed creeks, in the County of Sonoma, State of California, S. _____ T. _____ R. _____

WHEREAS, the Department (represented by Rayne Howe) has made an inspection of subject area on the 5 day of May, 1995, and has determined that such operations may substantially adversely affect existing fish and wildlife resources including: nongame fish, wetland vegetation.

THEREFORE, the Department hereby proposes measures to protect fish and wildlife during the operator's work. The operator hereby agrees to accept the following recommendations as part of his work: Numbers 1, 2, 9, 21, 22 from the list of recommendations on the back of this page and the following special recommendations:

A. All work in or near the stream or lake shall be confined to the period May 15, 1995 to October 31, 1995.

B. This permit covers the work necessary to construct Phase 1 of the Petaluma Marsh Enhancement Project.

C. LANDFILL CLOSURE SITE:

1) Broken concrete used for slope protection shall be of sufficient size so that high storm flows do not wash the concrete down stream.

2) The area where the new drainage ditch is to be excavated shall be free of flowing water. If water is present in the ditch to be diverted, the operator shall bypass the flow of water around the work area through a temporary culvert. Water shall not be directed to the new ditch until its construction has been completed.

3) The boundaries of excavation adjacent to the wetlands shall be clearly flagged or staked. Equipment shall not be operated outside the marked boundaries.

D. ADOBE CREEK WETLANDS MITIGATION SITE:

1) Excavation and/or grading equipment shall not be operated in flowing water. Diversions shall be constructed where necessary to keep equipment out of flowing.

The operator, as designated by the signature on this agreement, shall be responsible for the execution of all elements of this agreement. A copy of this agreement must be provided to contractors and subcontractors and must be in their possession at the work site.

If the operator's work changes from that stated in the notification specified above, this agreement is no longer valid and a new notification shall be submitted to the Department of Fish and Game. Failure to comply with the provisions of this agreement and with other pertinent Code Sections, including but not limited to Fish and Game Code Sections 5650, 5652 and 5945, may result in prosecution.

Nothing in this agreement authorizes the operator to trespass on any land or property, nor does it relieve the operator of responsibility for compliance with applicable federal, state, or local laws or ordinances.

THIS AGREEMENT IS NOT INTENDED AS AN APPROVAL OF A PROJECT OR OF SPECIFIC PROJECT FEATURES BY THE DEPARTMENT OF FISH AND GAME. INDEPENDENT REVIEW AND RECOMMENDATIONS WILL BE PROVIDED BY THE DEPARTMENT AS APPROPRIATE ON THOSE PROJECTS WHERE LOCAL, STATE, OR FEDERAL PERMITS OR OTHER ENVIRONMENTAL REPORTS ARE REQUIRED.

This agreement becomes effective on signature of the City of Petaluma and Fish and Game.

Operator _____ Department Representative _____

Title _____ Title _____

Organization _____ Department of Fish and Game, State of California

Date _____ Date _____

AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION

THIS AGREEMENT, entered into between the State of California, Department of Fish and Game, hereafter called the Department, and _____, State of _____, hereinafter called the operator, is as follows:

WHEREAS, pursuant to Division 2, Chapter 6 of California Fish and Game Code, the operator, on the _____ day of _____, 19____, notified the Department that he intends to substantially divert or obstruct the natural flow of, or substantially change the bed channel, or bank of, or use material from the stream of, the following water: _____, in the County of _____, State of California, S _____ T _____ R _____.

WHEREAS, the Department (represented by _____) has made an inspection of subject area on the _____ day of _____, 19____, and) has determined that such operations may substantially adversely affect existing fish and wildlife resources including _____.

THEREFORE, the Department hereby proposes measures to protect fish and wildlife during the operator's work. The operator hereby agrees to accept the following recommendations as part of his work: Numbers _____ from the list of recommendations on the back of this page and the following special recommendations:

- 1. All work in or near the stream or lake shall be confined to the period _____.

D- ADOBE CREEK WETLANDS MITIGATION SITE- continued:

_____ water. Instream diversions shall be constructed using sand bags or clean gravel and plastic sheeting.

2) Before construction begins for the placement of the two 36 inch culverts and the placement of the temporary culverts for the temporary stream crossing, the operator shall dewater each work area. The flow of water in the creek shall be blocked with a temporary dam constructed with sand bags or clean rock and plastic sheeting. With a dam in place, sufficient water shall at all times be allowed to pass down stream to maintain fish life below the dam. A temporary culvert may be used to bypass the flow of water around the work area.

3) If it is necessary to pump water from areas of excavation, that water shall not be pumped directly into the stream channel. Silt laden water shall be pumped off site to an area where it can not enter State waters.

The operator, as designated by the signature on this agreement, shall be responsible for the execution of all elements of this agreement. A copy of this agreement must be provided to contractors and subcontractors and must be in their possession at the work site.

If the operator's work changes from that stated in the notification specified above, this agreement is no longer valid and a new notification shall be submitted to the Department of Fish and Game. Failure to comply with the provisions of this agreement and with other pertinent Code Sections, including but not limited to Fish and Game Code Sections 5650, 5652 and 5918, may result in prosecution.

Nothing in this agreement authorizes the operator to trespass on any land or property, nor does it relieve the operator of responsibility for compliance with applicable federal, state, or local laws or ordinances.

THIS AGREEMENT IS NOT INTENDED AS AN APPROVAL OF A PROJECT OR OF SPECIFIC PROJECT FEATURES BY THE DEPARTMENT OF FISH AND GAME. INDEPENDENT REVIEW AND RECOMMENDATIONS WILL BE PROVIDED BY THE DEPARTMENT AS APPROPRIATE ON THOSE PROJECTS WHERE LOCAL, STATE, OR FEDERAL PERMITS OR OTHER ENVIRONMENTAL REPORTS ARE REQUIRED.

This agreement becomes effective on _____.

Operator _____ (Signature)

Title _____

Organization _____ Department of Fish and Game, State of California

Date _____

AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION

THIS AGREEMENT, entered into between the State of California, Department of Fish and Game, hereinafter called the Department, and _____, State of _____, hereinafter called the operator, is as follows:
 Refer to Page 1

WHEREAS, pursuant to Division 2, Chapter 6 of California Fish and Game Code, the operator, on the _____ day of _____, 19____, notified the Department that he intends to substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of, the following water: _____, in the County of _____, State of California, S _____ T _____ R _____.

WHEREAS, the Department (represented by _____) has made an inspection of subject area on the _____ day of _____, 19____, and has determined that such operations may substantially adversely affect existing fish and wildlife resources including: _____

THEREFORE, the Department hereby proposes measures to protect fish and wildlife during the operator's work. The operator hereby agrees to accept the following recommendations as part of his work: Numbers _____ from the list of recommendations on the back of this page and the following special recommendations:

1. All work in or near the stream or lake shall be confined to the period _____

D- ADOBE CREEK MITIGATION SITE- continued:

4) All environmentally sensitive areas within the stream channel of Adobe creek that are not to be disturbed shall be clearly marked so that equipment operators do not stray into those areas.

The operator, as designated by the signature on this agreement, shall be responsible for the execution of all elements of this agreement. A copy of this agreement must be provided to contractors and subcontractors and must be in their possession at the work site.

If the operator's work changes from that stated in the notification specified above, this agreement is no longer valid and a new notification shall be submitted to the Department of Fish and Game. Failure to comply with the provisions of this agreement and with other pertinent Code Sections, including but not limited to Fish and Game Code Sections 5650, 5652 and 5915, may result in prosecution.

Nothing in this agreement authorizes the operator to trespass on any land or property, nor does it release the operator of responsibility for compliance with applicable federal, state, or local laws or ordinances.

THIS AGREEMENT IS NOT INTENDED AS AN APPROVAL OF A PROJECT OR OF SPECIFIC PROJECT FEATURES BY THE DEPARTMENT OF FISH AND GAME. INDEPENDENT REVIEW AND RECOMMENDATIONS WILL BE PROVIDED BY THE DEPARTMENT AS APPROPRIATE ON THOSE PROJECTS WHERE LOCAL, STATE, OR FEDERAL PERMITS OR OTHER ENVIRONMENTAL REPORTS ARE REQUIRED.

This agreement becomes effective on _____

Operator _____ Secretary Department

Title _____ Title _____

Organization _____ Department of Fish and Game, State of California

Date _____ Date _____

RECOMMENDATIONS

1. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. The disturbed portions of any stream channel or lake margin within the high water mark of the stream or lake shall be restored to its near original condition as possible.
2. Restoration shall include the revegetation of stripped or exposed areas.
3. Rock, riprap, or other erosion protection shall be placed in areas where vegetation cannot reasonably be expected to become established.
4. Installation of bridges, culverts, or other structures shall be such that water flow is not impeded and upstream or downstream passage of fish is assured at all times. Bottoms of temporary culverts shall be placed at or below stream channel grade. Bottoms of permanent culverts shall be placed below stream channel grade.
5. Plans for design of concrete sills and other features that could potentially impede fish migration must be approved by Department engineers.
6. When any dam (any artificial obstruction) is being constructed or maintained, sufficient openings shall be provided to allow sufficient water to maintain fish life below the dam.
7. Any structure that impairs fish life must be incorporated into any barrier that obstructs fish passage.
8. Any temporary dam (any artificial obstruction) constructed shall only be built from material such as clean gravel which will cause little or no siltation.
9. No equipment will be operated in live stream channels.
10. Equipment shall not be operated in the stream channels of flowing live streams except as may be necessary to construct crossings or barriers and fills at channel changes.
11. When work in a flowing stream is unavoidable, the entire streamflow shall be diverted around the work area by a barrier, temporary culvert, and/or a new channel capable of permitting upstream and downstream fish movement. Construction of the barrier and/or the new channel shall normally begin in the downstream area and continue in an upstream direction, and the flow shall be diverted only when construction of the diversion is completed. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Channel banks or barriers shall not be made of earth or other substances subject to erosion unless first enclosed by sheet piling, rock riprap, or other protective material. The enclosure and the supportive material shall be removed when the work is completed and the removal shall normally proceed from downstream in an upstream direction.
12. Temporary fills shall be constructed of nonerodible materials and shall be removed immediately upon work completion.
13. Equipment shall not be operated in the lake or its margin except during excavation and as may be necessary to construct barriers or fills. If work in the lake is unavoidable, a curtain enclosure to prevent siltation of the lake beyond the immediate working area shall be installed. The enclosure and any supportive material shall be removed when the work is completed.
14. Silt settling basins shall be located away from the stream or lake to prevent discolored, silt-bearing water from reaching the stream or lake.
15. Preparation shall be made so that runoff from steep erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.
16. Wash water containing mud or silt from aggregate washing or other operations shall not be allowed to enter a lake or flowing streams.
17. a) A silt catchment basin shall be constructed across the stream immediately below the project site. This catchment basin shall be constructed of gravel which is free from mud or silt.
b) Upon completion of the project and after all flowing water in the area is clear of turbidity, the gravel along with the trapped sediment shall be removed from the stream.
18. If operations require moving of equipment across a flowing stream, such operations shall be conducted without substantially increasing stream turbidity. For repeated crossings, the operator shall install a bridge, culvert, or rock-fill crossing as specified in comments below.
19. If a stream channel has been altered during the operations, its low flow channel shall be returned as nearly as possible to its natural state without creating a possible future bank erosion problem, or a flat wide channel or ditch-like area. If a lake margin has been altered, it shall be returned as nearly as possible to its natural state without creating a future bank erosion problem. The gradient of the streambed or lake margin shall be as nearly as possible the same gradient as existed prior to disturbance.
20. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.
21. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any logging, construction, or associated activity of whatever nature shall be allowed to enter into or placed where it may be washed by rainfall or runoff into waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream or lake.
22. The operator will notify the Department of Fish and Game of the date of commencement of operations and the date of completion of operations at least five days prior to such completion.



This notice of authorization must be
conspicuously displayed at the site of work.

United States Army Corps of Engineers

1995

A permit to construct various highway improvements
at Lakeville Highway, between Coulfield and Featers Road
has been issued to City of Petaluma on 16 May 1995

Address of Permittee Planning Department, P.O. Box 61,
Petaluma, CA 94953

Permit Number

19798439

MICHAEL J. WALSH
District Commander

NOTICE TO PERMITTEE

Please use the forms below to report the dates when you start and finish the work authorized by the enclosed permit. Also if you suspend work for an extended period of time, use the forms below to report the dates you suspended and resumed work. The second copy is for your records. If you find that you cannot complete the work within the time granted by the permit, please apply for a time extension at least one month before your permit expires. If you materially change the plan or scope of the work, it will be necessary for you to submit new drawings and a request for a modification of your permit.
(cut out as needed)

Date: _____

NOTICE OF COMPLETION OF WORK under Department of the Army permit No. -019798-0N-39
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 211 Main Street, San Francisco, CA 94105

In compliance with the conditions of the permit dated 16 May 1995 to construct various improvements to Lakeville Highway, this is to notify you that the work was completed on _____.

Permittee: City of Petaluma
Address: Planning Department, P.O. Box 61, Petaluma, CA 94953

Date: _____

NOTICE OF RESUMPTION OF WORK under Department of the Army permit No. -019798-0N-39
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 211 Main Street, San Francisco, CA 94105

In compliance with the conditions of the permit dated 16 May 1995 to construct various improvements to Lakeville Highway, this is to notify you that work was resumed on _____.

Permittee: City of Petaluma
Address: Planning Department, P.O. Box 61, Petaluma, CA 94953

Date: _____

NOTICE OF SUSPENSION OF WORK under Department of the Army permit No. -019798-0N-39
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 211 Main Street, San Francisco, CA 94105

In compliance with the conditions of the permit dated 16 May 1995 to construct various improvements to Lakeville Highway, this is to notify you that work was suspended on _____.

Permittee: City of Petaluma
Address: Planning Department, P.O. Box 61, Petaluma, CA 94953

Date: _____

NOTICE OF COMMENCEMENT OF WORK work under Department of the Army permit No. -019798-0N-39
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 211 Main Street, San Francisco, CA 94105

In compliance with the conditions of the permit dated 16 May 1995 to construct various improvements to Lakeville Highway, this is to notify you that work was commenced on _____.

Permittee: City of Petaluma
Address: Planning Department, P.O. Box 61, Petaluma, CA 94953

DEPARTMENT OF THE ARMY PERMIT

Permittee: City of Petaluma

MAY 16 1995

Permit No: 19798N39

Issuing Office: San Francisco District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The permittee is authorized to construct various structures and discharge fill material into waters of the United States associated with proposed roadway improvements to Lakesville Highway. Authorized work includes the following activities: (a) Incidental discharges associated with excavation work below ordinary high water, requiring the removal of 3,977 cubic yards (cys) of material from 0.72 acres of brushy drainage swales adjacent to the road; (b) Construction of new travel lanes and shoulders, requiring the discharge of 5,862 cys of engineered backfill into 0.94 acres of brushy drainage swales and freshwater wetlands adjacent to the road; (c) Construction of a 15-foot extension to an existing box culvert, replacement of tide gate, and construction of a new concrete headwall and temporary coffer dam in McDowell Creek, requiring the discharge of 298 cys of earthen backfill, concrete, and rock riprap below the high tide line of the creekbed; (d) Construction of a 17-foot extension to an existing concrete bridge structure, new concrete headwall, and temporary coffer dam in Adobe Creek, requiring the discharge of 166 cys of earthen backfill, concrete, and rock riprap below ordinary high water of the creekbed; and (e) Reconstruction of access road to mitigation site and construction of a temporary coffer dam in a tributary drainage channel to Adobe Creek, requiring the discharge of 15 cys of earthen fill material below ordinary high water of the creekbed. This work will be performed in accordance with the attached drawings labeled: "PROPOSED ROAD WIDENING, IN McDOWELL AND ADOBE CREEKS AND ADJACENT DRAINAGE SWALES, AT LAKEVILLE HIGHWAY, COUNTY OF SONOMA, CALIFORNIA, APPLICATION BY CITY OF PETALUMA," in twenty-one sheets dated May 1994.

Project Location:

Lakesville Highway (State Route 116), between Caulfield and Estes Road, City of Petaluma, Sonoma County, California.

Permit Conditions:

General Conditions

1. The time limit for completing the work authorized ends on 1 January 2001. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions: Refer to Page 2A for special conditions to Permit No. 19798N39.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

Section 401 of the Clean Water Act (33 U.S.C. 1341)

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

2. Limits of this authorization

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of either permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

SPECIAL CONDITIONS TO PERMIT NO. 19798N39

1. To compensate for the loss of 0.94 acres of jurisdictional wetlands and other waters of the United States associated with the widening of Lakeville Highway, mitigation, maintenance, and monitoring work shall be performed in the manner set forth in the *Final Wetland Mitigation Plan and Monitoring Program for Lakeville Highway Widening, Channelization, and Signalization Project*, dated April 1995, prepared by Questa Engineering (Exhibit A). This plan calls for the creation of approximately one acre of brackish wetlands along the middle reach of Adobe Creek and approximately one acre of riparian habitat along the middle and lower reaches of Adobe Creek to provide buffer habitat for the created wetlands. In addition, this plan satisfies a non-compliance order for the Petaluma Marina (Permit No. 16511N39) by creating 0.07 acres of salt marsh habitat on the lower reach of Adobe Creek as compensation for the loss of salt marsh habitat in the marina basin.

2. Required mitigation work shall be performed prior to or concurrent with any fill discharge into jurisdictional waters and wetlands associated with the road widening project.

3. Maintenance and monitoring of the mitigation site shall continue for a minimum of five (5) years following initial planting or until such time as the specified final success criteria have been met, subject to the written confirmation of the Corps. If any corrective contingency measure is required to ensure compliance with final success criteria, the Corps, in consultation with other Federal and State resource agencies, may exercise its discretionary authority and extend the maintenance and monitoring period for that measure beyond the initial five-year period.

4. An annual monitoring report shall be prepared which includes an overall assessment of the mitigation program in accordance with the annual and final success criteria specified in *Figure 12* of the Mitigation Plan; photodocumentation of the mitigation site; maintenance activities conducted during the previous growing season; and remedial planting and maintenance recommendations requiring the concurrence of the Corps. Annual monitoring reports shall be submitted by 30 July of each year of the monitoring period, beginning the year following the first growing season after planting. Annual monitoring reports shall be distributed to the following Federal and State resource agencies for review and comment, concurrent with the Corps receipt of this information:

a. U.S. Army Corps of Engineers, San Francisco District, Regulatory Branch, 211 Main Street, San Francisco, CA 94105-1905

b. U.S. Fish and Wildlife Service, Ecological Services, Room B-1803, 2800 Cottage Way, Sacramento, CA 95825-1846

c. National Marine Fisheries Service, 777 Sonoma Avenue, Room 325, Santa Rosa, CA 95404

d. U.S. Environmental Protection Agency, Region IX, Attn: W-7-2, 75 Hawthorne Street, San Francisco, California 94105

e. California Department of Fish and Game, Region III, P.O. Box 47, Yountville, California 94559

5. To provide further enhancement and protection of created wetland habitat, fencing shall be erected, as appropriate and necessary, along the levee/trail and adjacent properties within the Lakeville Business Park to deter human and vehicular access to the mitigation site.

6. To minimize disturbance to migratory steelhead populations in Adobe Creek, project-related construction and mitigation work occurring in the creekbed shall be confined to the period of 1 June through 31 October.

7. Mitigation construction, maintenance, and monitoring work shall be subject to inspection by the Corps and other Federal and State resource agencies, upon notification of the permittee.

8. Upon completion of project-related construction and mitigation work, all cofferdams shall be removed from the creekbeds and the affected areas restored to the pre-construction condition. Fill materials associated with cofferdam construction shall be disposed at an upland site not subject to Corps regulatory authority.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Release on Applicant's Date: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- You fail to comply with the terms and conditions of this permit.
- The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- Significant new information surfaces which this office does not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit or for the initiation of legal action where appropriate. You will be required to pay for any enforcement measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 320.170) apply the respective measures by contract or otherwise and bill you for the cost.

6. Time Limit: Condition 3 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permitted, indicates that you accept and agree to comply with the terms and conditions of this permit.

CITY OF PETALUMA

[Signature]
CITY MANAGER (Date) 5-23-93

[Signature]

CITY CLERK

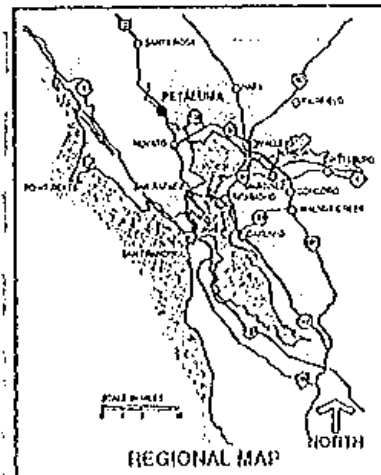
This permit becomes effective when the local official, designated for the Secretary of the Army, has signed below.

[Signature]
CITY CLERK (Date) 5-14-93

When the structures are well advanced by this permit, it will in a separate notice have the property transferred. The terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated fee, please advise us in writing of the new owner(s), have the owner(s) sign and date below.

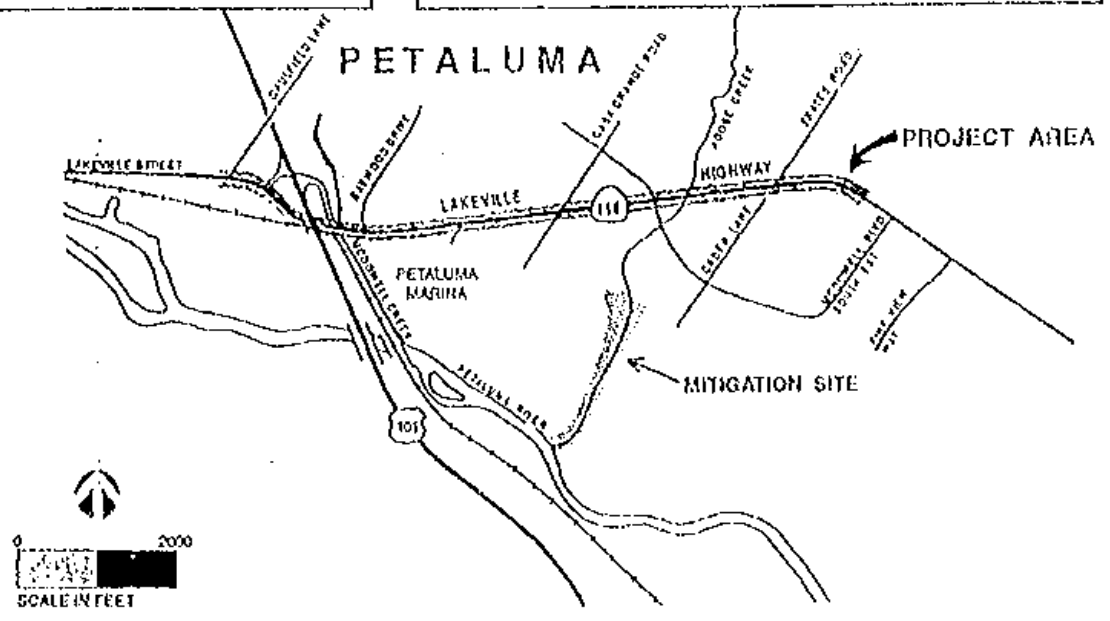
(Signature)

(Date)



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| 4. PLAN VIEW - AREAS 1-4' | 17. PLAN VIEW - ACCESS ROAD TO MITIGATION SITE - AREA D |
| 5. PLAN VIEW - AREAS A, B, C' | 18. CULVERT REPLACEMENT FOR ACCESS ROAD - AREA D |
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| 8. MCDOWELL CREEK CULVERT PROFILE - AREA C | 21. WETLAND MITIGATION SITE (LOWER ADOBE) - AREA 4K |
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| 12. PLAN VIEW - AREA 12' | |
| 13. ADOBE CREEK BRIDGE EXTENSION AT AREA 12' | |
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PROPOSED
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 116)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA




LOCATION MAP

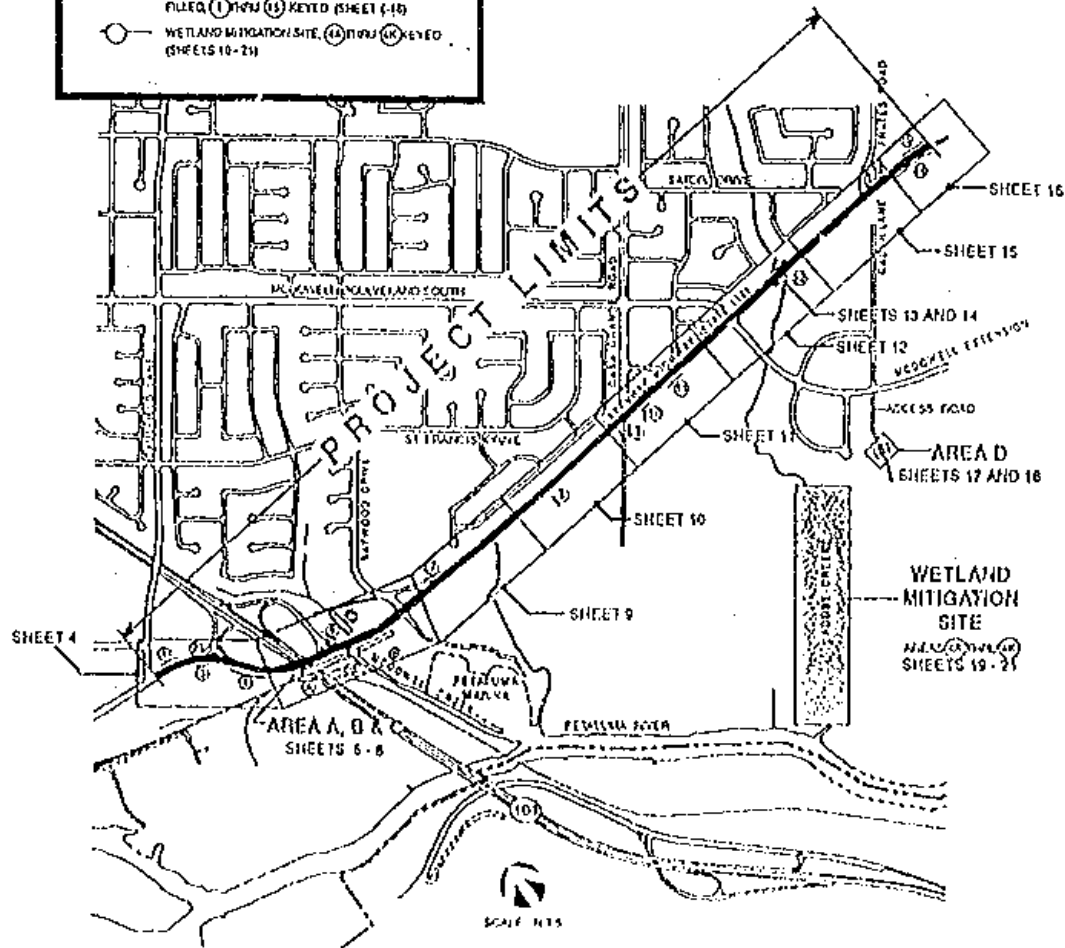
PROPOSED WORK
 IN: MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CARFIELD
 LAKE AND FRATE'S ROAD (POST MILE 35.0 TO 36.5)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA

APPLICATION BY: CITY OF PETALUMA
 SHEET 1 OF 21 DATE: MAY 1994

LEGEND TO AREAS TO BE FILLED

-  AREAS A, B, C, AND D: TIDAL WETLANDS TO BE FILLED (SHEETS 3-8, 17 & 18)
-  WETLAND ROADSIDE DRAINAGE AREAS TO BE FILLED (A) (SHEETS 11) KEYED (SHEET 4-18)
-  WETLAND MITIGATION SITE (B) (SHEETS 19-21) KEYED (SHEETS 10-21)



PROPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 118)
 WIDENING PROJECT
 IN THE
 CITY OF FETALUMA

PROJECT LIMITS

PROPOSED WORK
 IN: MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAROLINE D
 LANE AND FRATELLO ROAD (POST MILE 35.0 TO 35.5)
 CITY OF FETALUMA, SONOMA COUNTY,
 CALIFORNIA

APPLICATION BY: CITY OF FETALUMA

SHEET: 2 OF 21 DATE: MAY 1994

SUMMARY OF JURISDICTIONAL AREAS (VOLUME OF EXCAVATION AND FILL)

SECTION 404 JURISDICTION

	AREA (FT. ²)	EXCAVATION (C.Y.)	FILL (C.Y.)
TIDAL WETLAND AREAS			
<ul style="list-style-type: none"> ADJACENT ROADSIDE SWALES, MCDOWELL CREEK CHANNEL, AND COFFER DAM AREAS A, B, AND C. (SHEETS 5 - 8) 	31,824	3,977 (1)	6160 (1)
<ul style="list-style-type: none"> DRAINAGE CHANNEL INCLUDING COFFER DAM AREA D (SHEETS 17 AND 18) 	600	N/A	98
NON TIDAL WETLANDS			
<ul style="list-style-type: none"> ROADSIDE DRAINAGE AREAS TO BE FILLED AREAS 1 THRU 15 (SHEETS 4 - 16) 	9,004	N/A	526
WETLANDS MITIGATION SITE			
<ul style="list-style-type: none"> ADOBE CREEK SITE AREAS 4A THRU 4K (SHEETS 19 - 21) 	46,660	4701	0
TOTAL EXCAVATION	46,660 (FT²)	4701 (C.Y.)	
TOTAL FILL	41,428 (FT²)		6784 (C.Y.)

(1) INCLUDES 3,977 C.Y. OF OVER EXCAVATION AND ENGINEERED BACKFILL.

PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
ALONG NGVU (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK

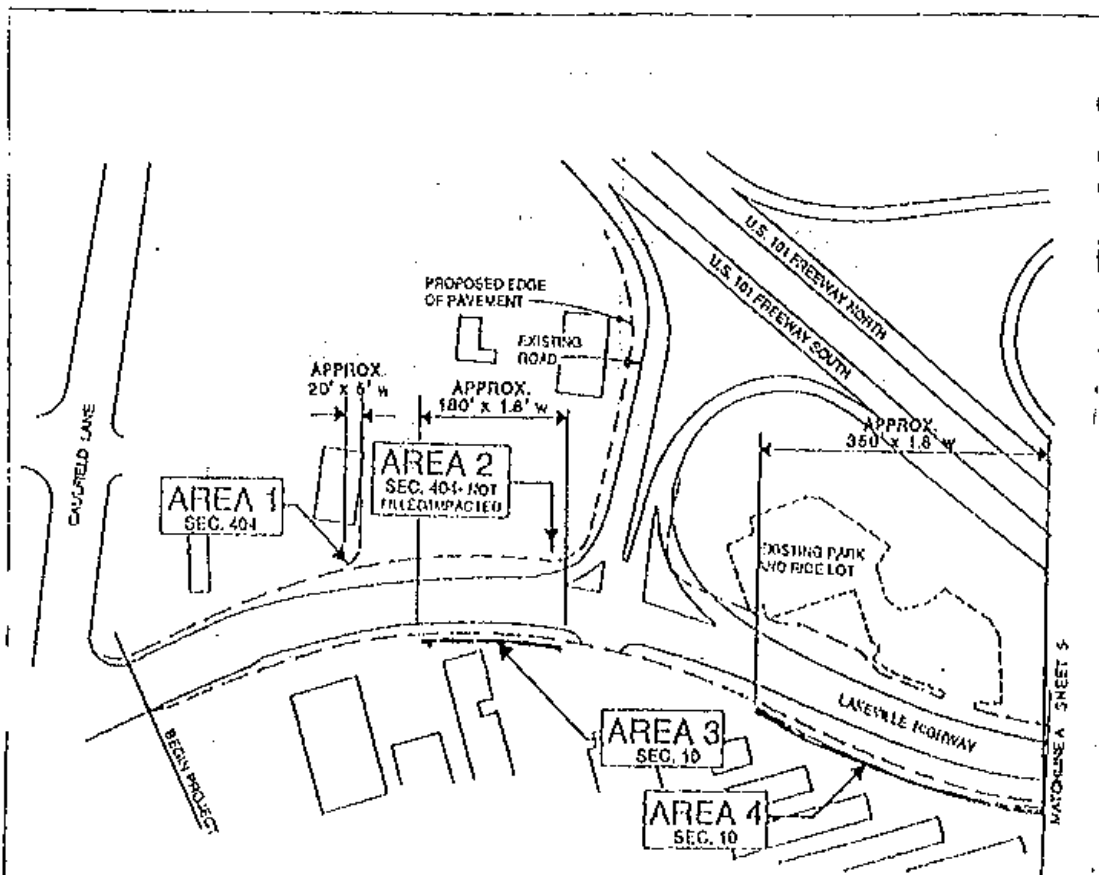
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
BY THE
CITY OF PETALUMA
SUMMARY OF
JURISDICTIONAL AREAS
(VOLUME OF
EXCAVATION AND FILL)

PROPOSED WORK
IN: MCDOWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

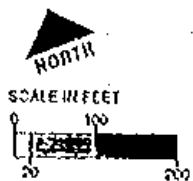
AT: LAKEVILLE HIGHWAY BETWEEN CARLFIELD
LANE AND THURTES ROAD (POST MILE 35.0 TO 36.5)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATOR BY: CITY OF PETALUMA

SHEET: 3 OF 21 DATE: MAY 1994



MAYORSE A SHEET 5



ROADSIDE DRAINAGE AREAS
 LENGTH AND WIDTH OF IMPACTED WETLAND, TYP.

PROPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DRAIN; NOVD (MSL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 138)
 WIDENING PROJECT
 IN THE
 CITY OF FLATLUMA
 PLANNING
 AREAS 1, 4

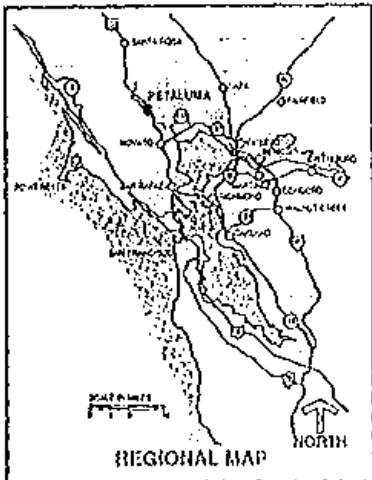
PROPOSED WORK
 IN: McDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
 LAKE AND FRATES ROAD (POST MILE 35.910 TO 36.5)
 CITY OF FLATLUMA, SONOMA COUNTY,
 CALIFORNIA

APPLICATION BY: CITY OF FLATLUMA

SHEET: 4 OF 21 DATE: MAY 1994

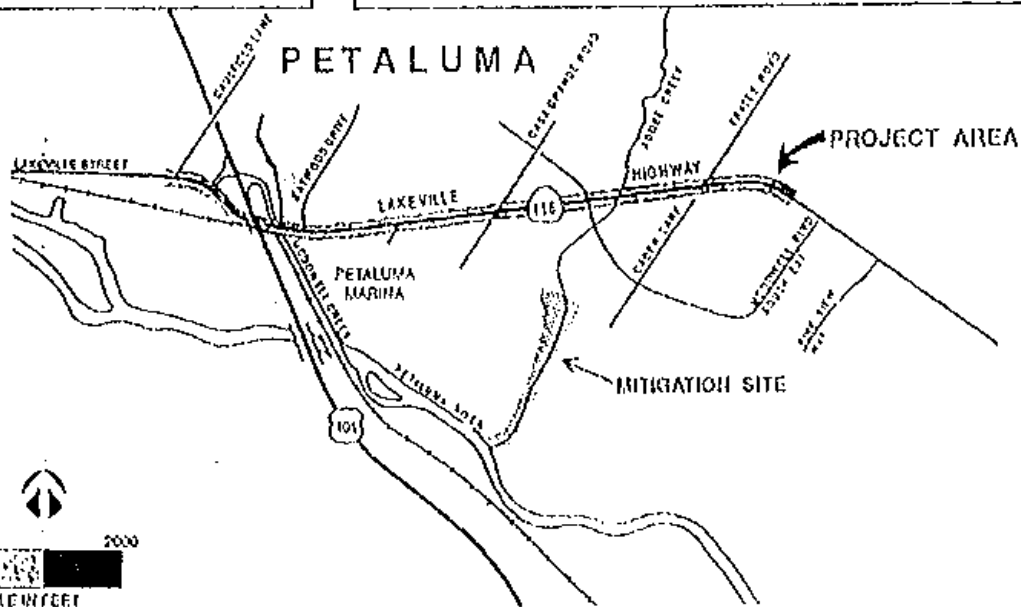
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(MIDDLE ADOBE) AREAS 4A
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CULVERT EXTENSION - AREA C | 20. SECTIONS - WETLAND MITIGATION
SITE - AREAS 4A THROUGH 4K |
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PROFILE - AREA C | 21. WETLAND MITIGATION SITE (LOWER
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| 12. PLAN VIEW - AREA 12' | |
| 13. ADOBE CREEK BRIDGE EXTEN-
SION AT AREA 12' | |

* INDICATES AREA OF WETLAND FILL



PROPOSED
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
ALONG LAKEVILLE HIGHWAY (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK.

LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF PETALUMA

LOCATION MAP




PROPOSED WORK
IN: MCDOWELL CREEK, ADOBE CREEK AND
BONDSIDE DRAINAGE AREAS

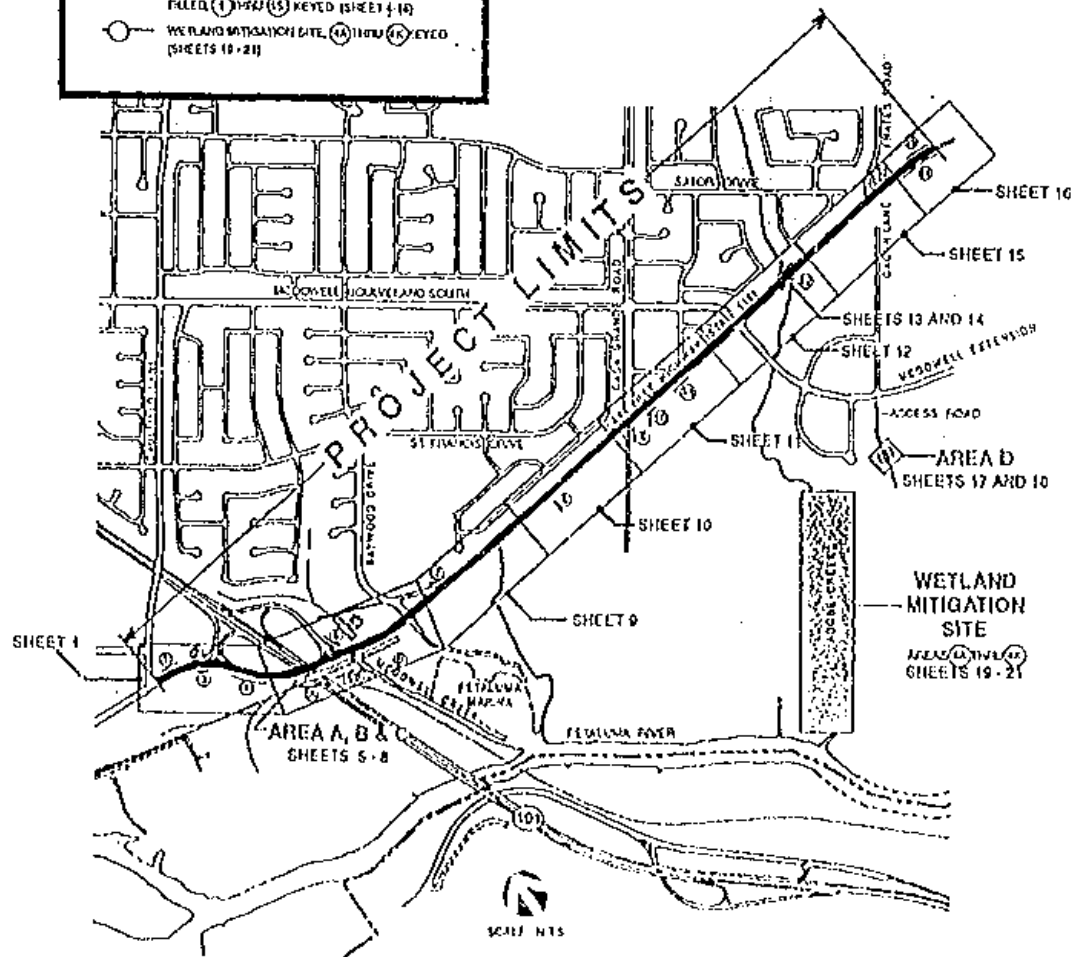
AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LINE AND FRATES ROAD (POST MILE 35.0 TO 36.1)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPROXIMATELY: CITY OF PETALUMA

SHEET 5 OF 21 DATE: MAY 1994

LEGEND TO AREAS TO BE FILLED

-  AREAS A, B, C, AND D TO BE FILLED (SHEETS 5 - 8, 17 & 18)
-  WETLAND/ROADSIDE DRAINAGE AREAS TO BE FILLED (A) UNKEYED (SHEET 4-18)
-  WETLAND MITIGATION SITE (A) UNKEYED (SHEETS 19-21)



PROPOSED
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

LAKEVILLE
 IRONWAY
 (STATE ROUTE 116)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA

PROJECT LIMITS

PROPOSED WORK

IN: MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CALFIELD
 LAKE AND FRANKS ROAD (POST MILE 35.0 TO 36.5)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA

APPLICATOR BY: CITY OF PETALUMA

SHEET: 2 OF 21 DATE: MAY 1994

SUMMARY OF JURISDICTIONAL AREAS (VOLUME OF EXCAVATION AND FILL)

SECTION 404 JURISDICTION

	AREA (FT ²)	EXCAVATION (C.Y.)	FILL (C.Y.)
TIDAL WETLAND AREAS			
<ul style="list-style-type: none"> • ADJACENT ROADSIDE SWALES, MCDOWELL CREEK CHANNEL, AND COFFER DAM AREAS A, B, AND C. (SHEETS 5 - 8) 	31,824	3,977 (1)	6160 (1)
<ul style="list-style-type: none"> • DRAINAGE CHANNEL INCLUDING COFFER DAM AREA D. (SHEETS 17 AND 18) 	600	N/A	98
NON TIDAL WETLANDS			
<ul style="list-style-type: none"> • ROADSIDE DRAINAGE AREAS TO BE FILLED AREAS 1 THRU 16 (SHEETS 4 - 16) 	9,004	N/A	626
WETLANDS MITIGATION SITE			
<ul style="list-style-type: none"> • ADOBE CREEK SITE AREAS 4A THRU 4K (SHEETS 19 - 21) 	46,660	4701	0
TOTAL EXCAVATION	46,660 (FT²)	4701 (C.Y.)	
TOTAL FILL	41,428 (FT²)		6784 (C.Y.)

(1) INCLUDES 3,977 C.Y. OF OVER EXCAVATION AND ENGINEERED BACKFILL

PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK.

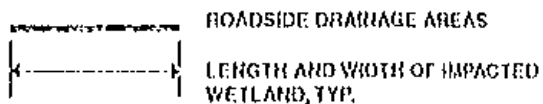
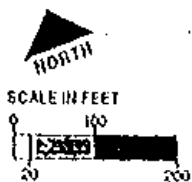
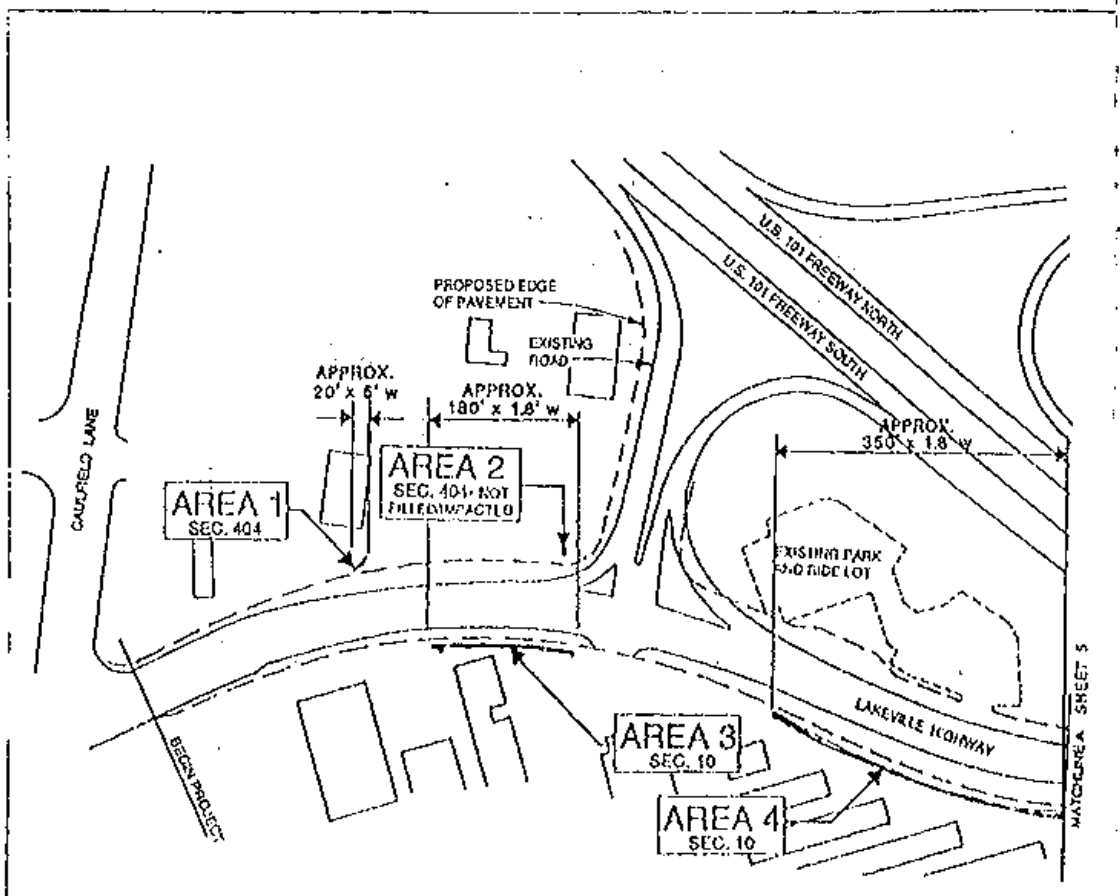
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF PETALUMA
**SUMMARY OF
JURISDICTIONAL AREAS
(VOLUME OF
EXCAVATION AND FILL)**

PROPOSED WORK
IN: MCDOWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LANE AND FRATES ROAD (POST MILE 35.0 TO 36.5)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

SHEET: 3 OF 24 DATE: MAY 1994



PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DURING HGV0 (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK

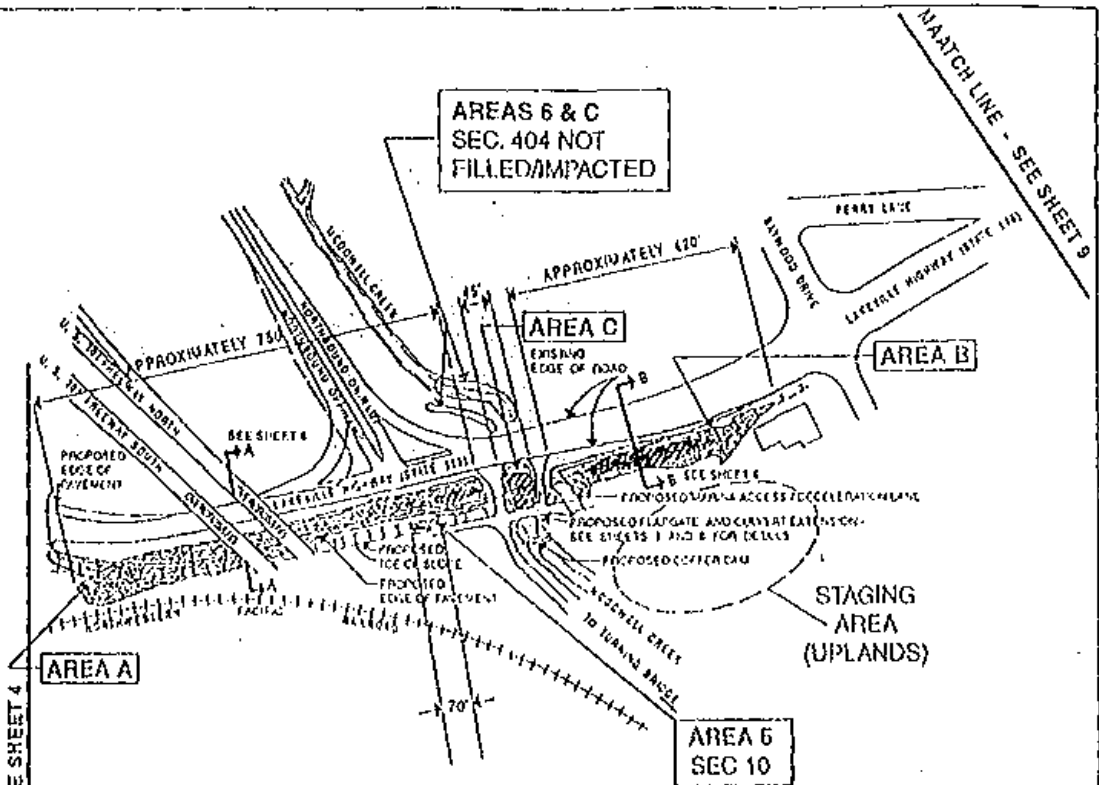
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF FETALUMA
PLANVIEW
AREAS 1-4

PROPOSED WORK
III: MCDOWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS





A1: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LANE AND FRATES ROAD (POST MILE 35.010 TO 35.5)
CITY OF FETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF FETALUMA

SHEET: 4 OF 21 DATE: MAY 1994



NOTE:
 DREDGING ALONG HIGHWAY DITCH WETLANDS CONSISTS OF OVER EXCAVATION OF SOFT SOILS AND BACK-FILL WITH IMPORTED SOIL/ENGINEERED FILL. SPOIL DISPOSAL AT CITY DREDGING DISPOSAL SITE AS SHOWN ON SHEET 19.

-  SECTION 404 JURISDICTION (AREAS AT OR BELOW 4.7 NGVD, HIGH TIDE LINE)
-  SECTION 19 JURISDICTION (AREAS AT OR BELOW 2.9 NGVD, MEAN HIGH WATER)
-  ROADSIDE DRAINAGE AREAS / LENGTH AND WIDTH OF IMPACTED WETLANDS, TYP
-  ROADSIDE DRAINAGE NOT FILLED



PROPOSE
 REDUCE TRAFFIC CONGESTION AND IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL ALONG LAKEVILLE HIGHWAY AND WETLAND MITIGATION ALONG ADOBE CREEK.

LAKEVILLE HIGHWAY
 (STATE ROUTE 119)
 WIDENING PROJECT
 WETLE
 CITY OF FETALUMA

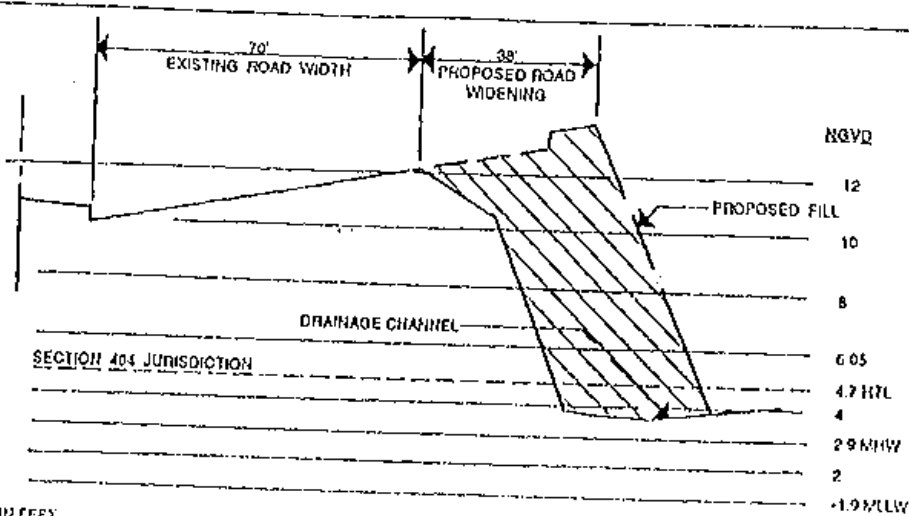
PLAN VIEW
 AREAS A, B, AND C

PROPOSED WORK
 III: MCDOWELL CREEK, ADOBE CREEK AND ROADSIDE DRAINAGE AREAS

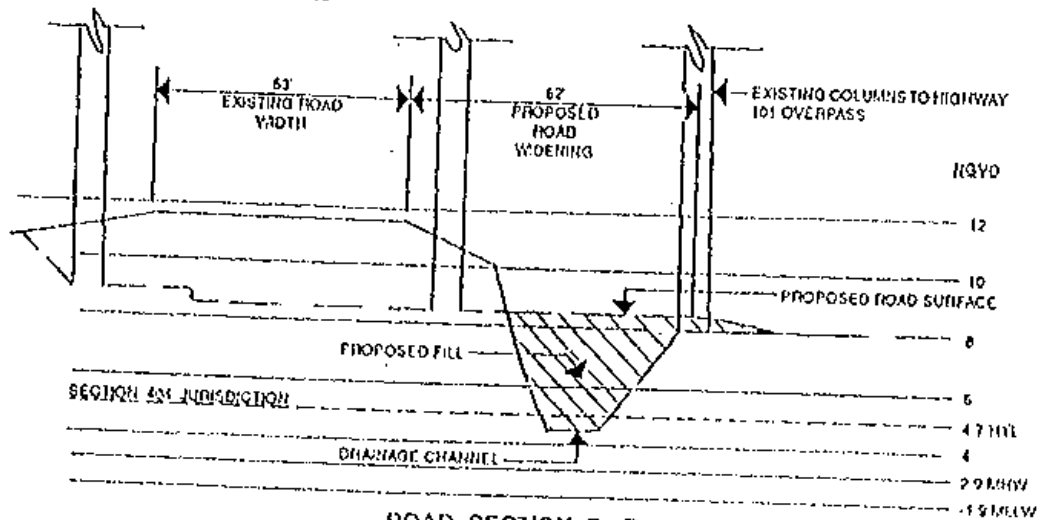
AT: LAKEVILLE HIGHWAY BETWEEN CASFIELD LAKE AND FRATE'S ROAD (POST MILE 35.0 TO 36.5) CITY OF FETALUMA, COLUSA COUNTY, CALIFORNIA

APPLICATION BY: CITY OF FETALUMA

SHEET 5 OF 21 5/8/11 MAY 2011



ROAD SECTION A - A



ROAD SECTION B - B

PURPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 114)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA

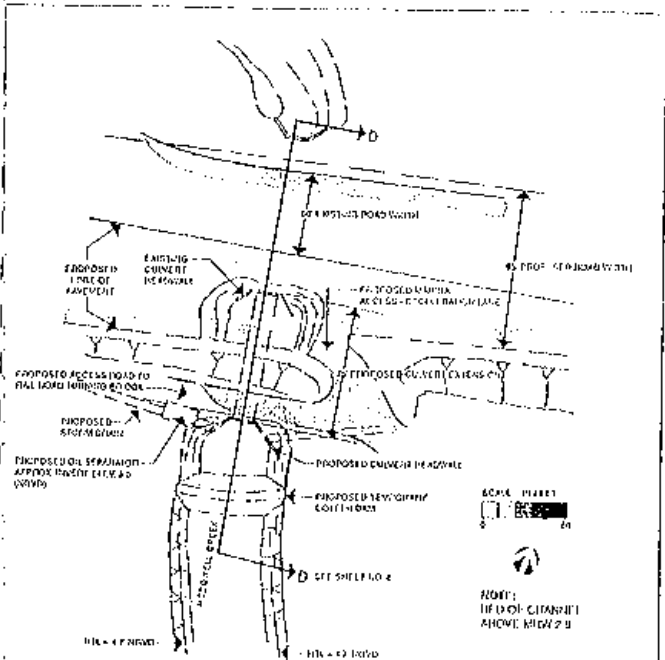
SECTION
 AREAS A AND B

PROPOSED WORK
 (A) ADOBE CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
 LANE AND STATE ROAD (POST MILE 35.0 TO 36.5)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA

APPLICATION BY: CITY OF PETALUMA
 SHEET 6 OF 21 DATE: MAY 1984

NO. 19796139

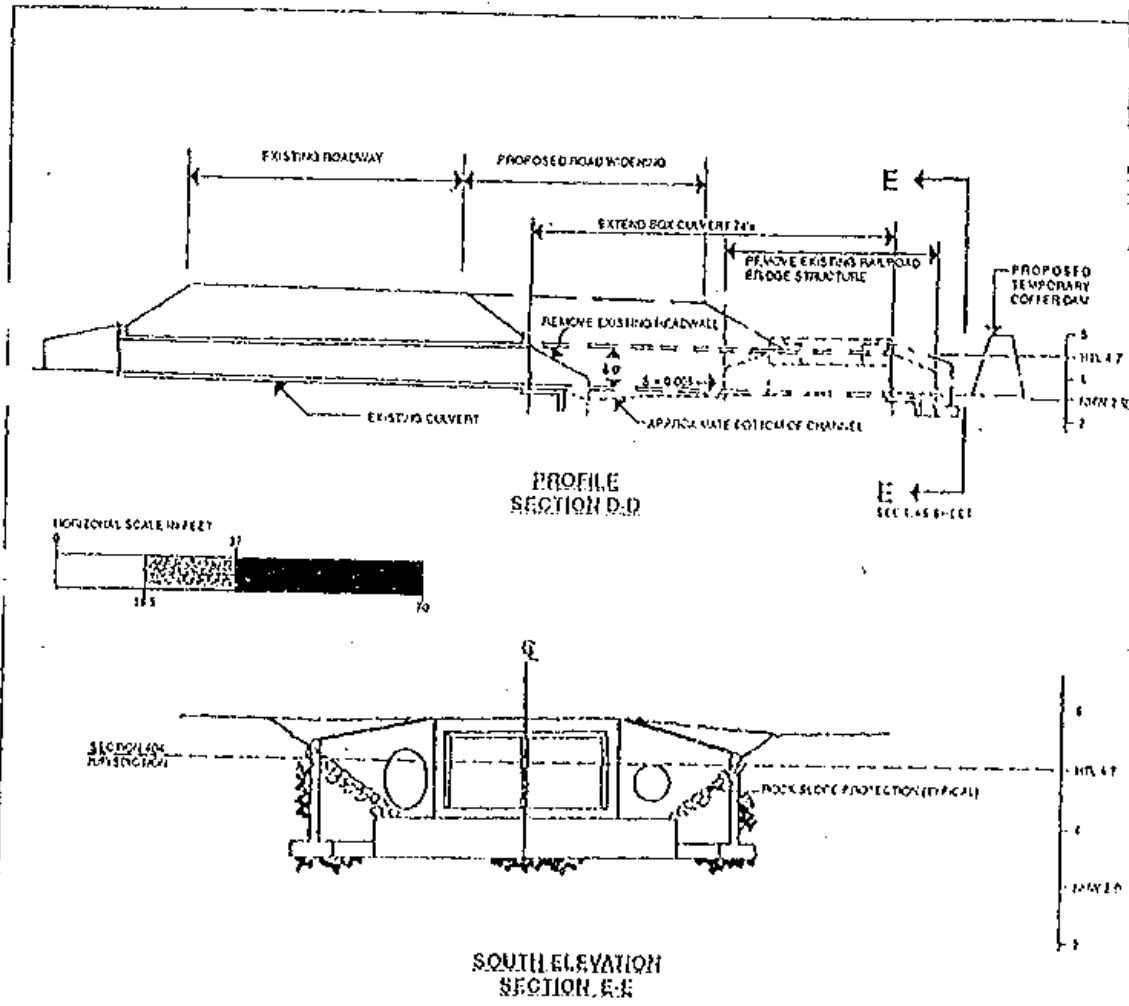


PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
(DATE: 1/20/55)

PROPOSED ROAD WIDENING AND
ALONG LAKEVILLE HIGHWAY AND
WEST AND EAST SIDE ALONG
ALONG CREEK

LAKEVILLE
HIGHWAY
(STATE ROUTE 814)
WELLS FUNDING
COUNTY
CITY OF FALLEN
LAKEVILLE, CALIFORNIA
MICHIGAN, CHECK
CULVERT EXTENSION
AREA C

PROPOSED WORK
IN - MICHELL CREEK, ABOVE CHECK AND
BEHIND ORCHARD AREAS
AS - LAKEVILLE HIGHWAY BE INTERCHANGED
WITH LAKEVILLE HIGHWAY AND STATE 814
CITY OF LAKEVILLE, CALIFORNIA
ASSIGNED BY - CITY OF LAKEVILLE
DATE: 1/20/55



NOTE:
CHANNEL BED
ABOVE MIW 2.9'

PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK

LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WILKING FROM 'C1'
IN THE
CITY OF PETALUMA

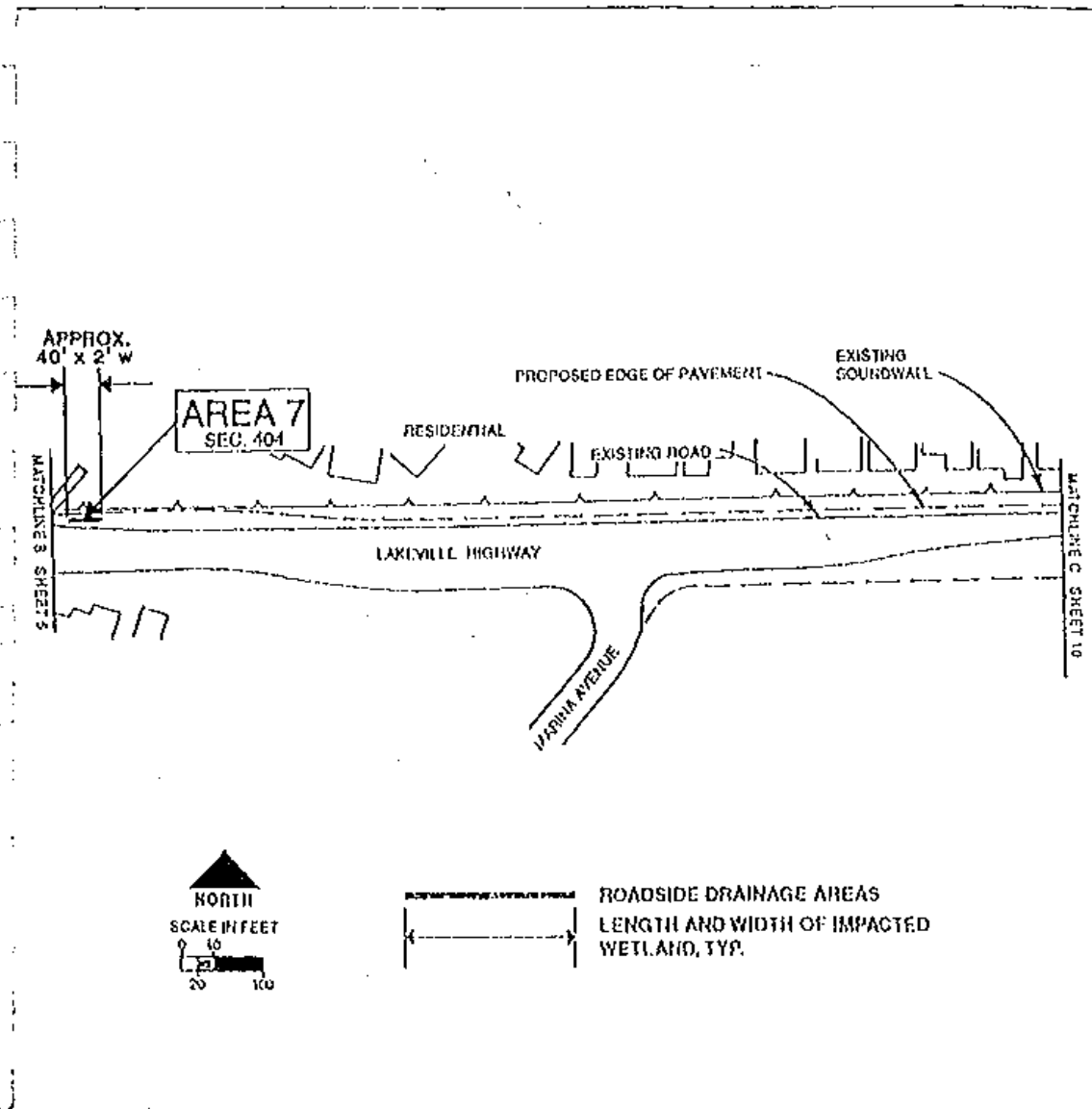
MOODWELL CREEK
CULVERT PROFILE
AREA, C

PROPOSED WORK
III: MOODWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LAKE AND FRATE'S ROAD (POST MILE 35.0 TO 36.5)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

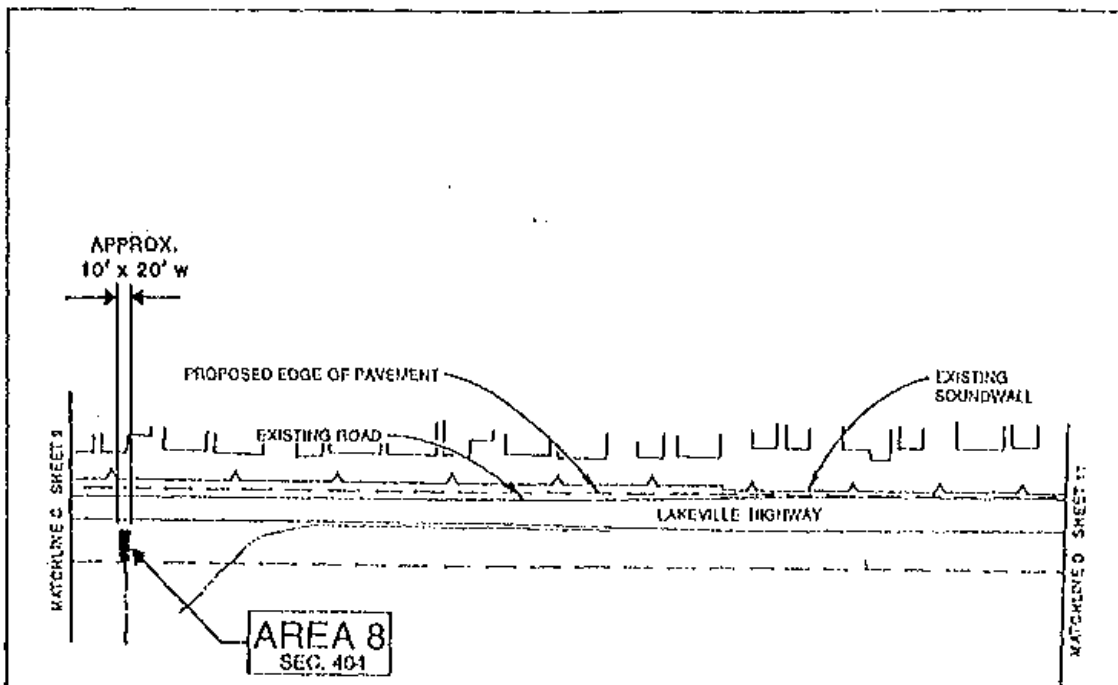
SHEET 6 OF 21 DATE: MAY 1992



PROPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 (AUM; NGVD (MSL))
 PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK

LAKENVILLE
 HIGHWAY
 (STATE ROUTE 118)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA
 PLAN VIEW
 AREA 7

PROPOSED WORK
 (i) MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS
 (ii) LAKEVILLE HIGHWAY BETWEEN CAULFIELD
 LAKE AND HATES ROAD (POST MILE 35.0 TO 36.5)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA
 APPLICATION BY: CITY OF PETALUMA
 SHEET: 9 OF 21 DATE: MAY



PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATE: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK.

LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
WITH
CITY OF PETALUMA

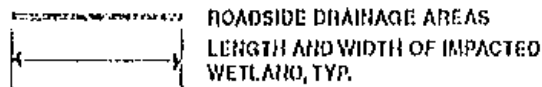
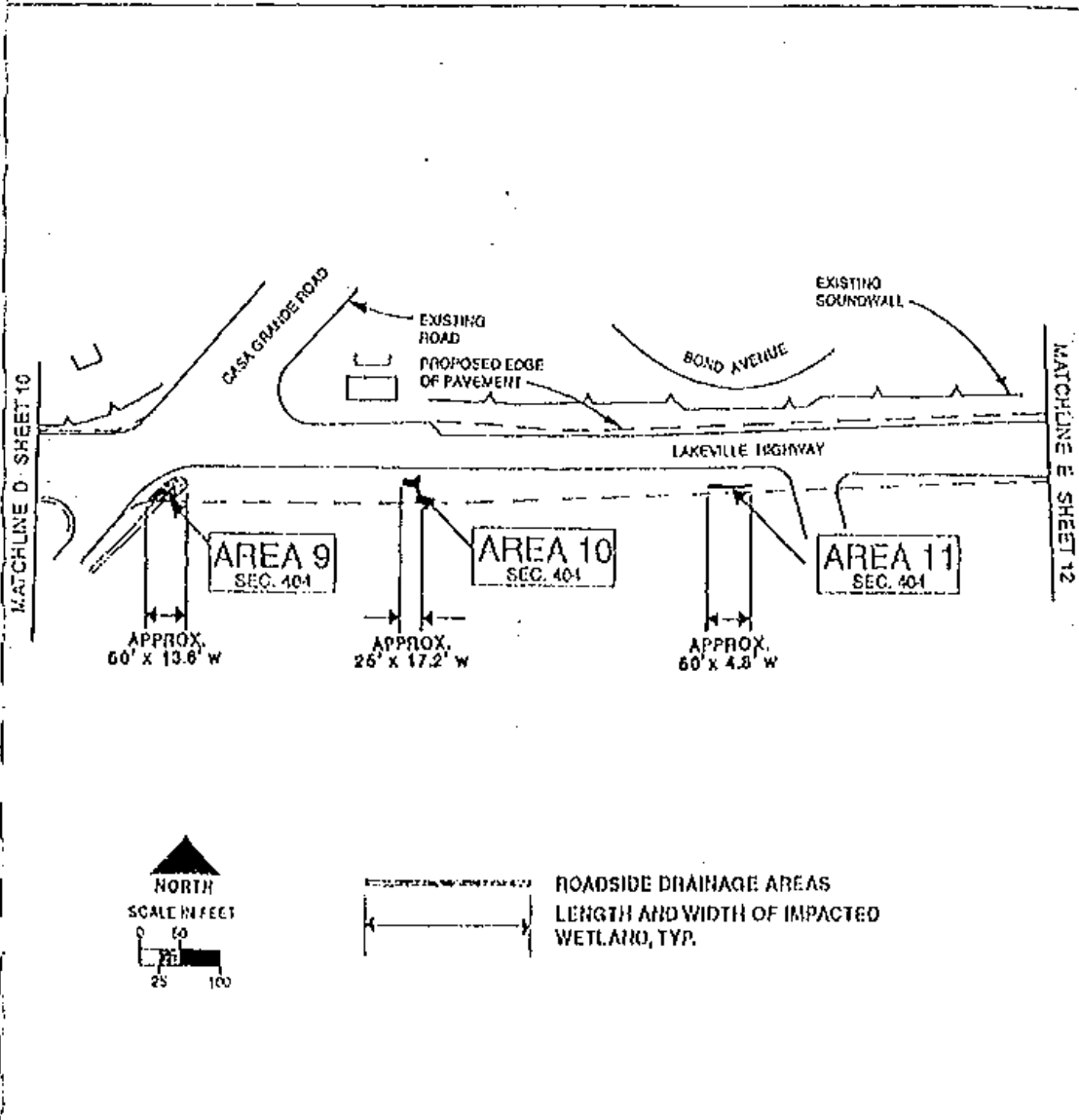
PLAN VIEW
AREA 8

PROPOSED WORK
(I) MCCOWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

A1: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LAKE AND FATES ROAD (POST MILE 35.0 TO 36.5)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

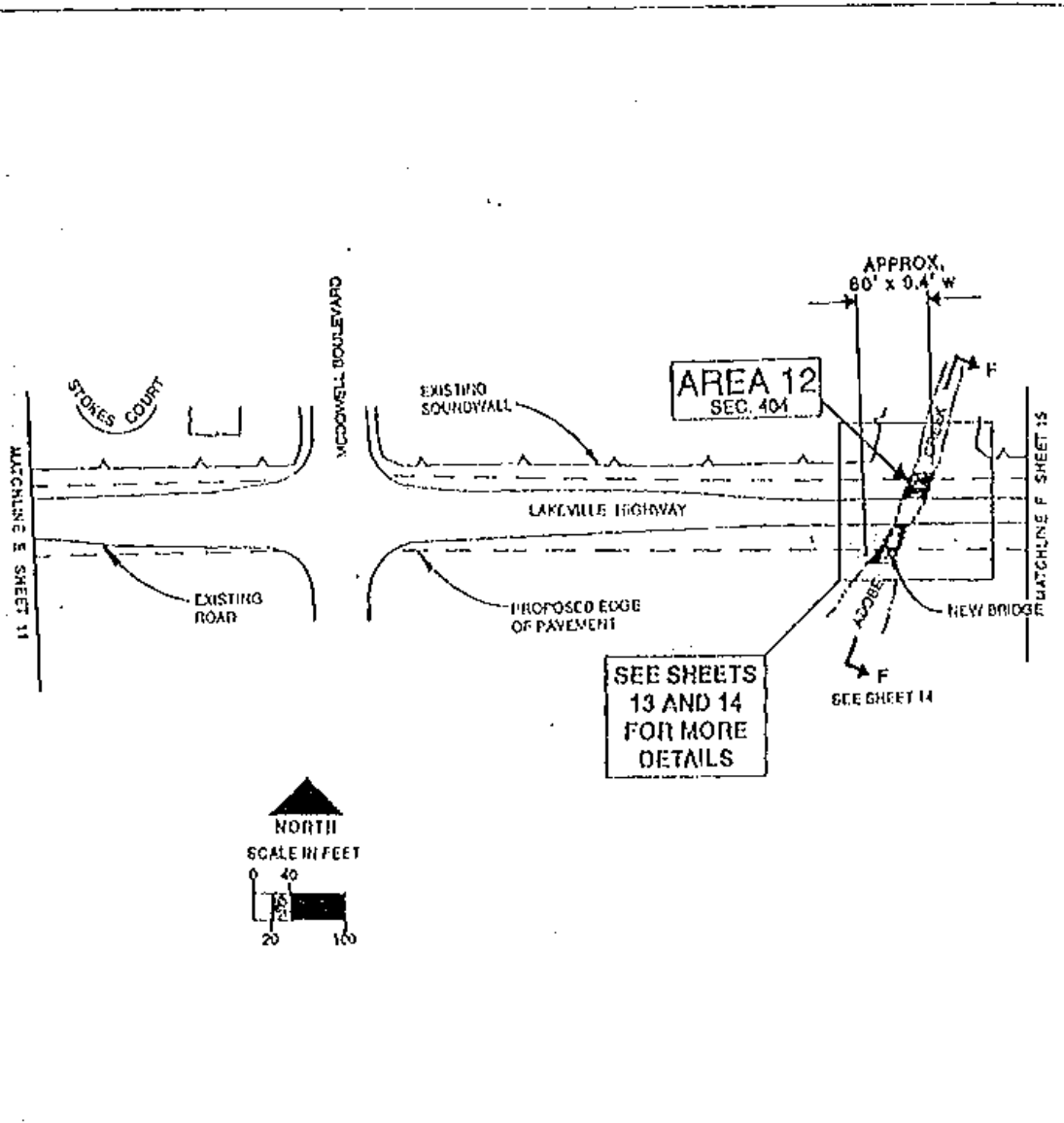
SHEET: 10 OF 21 DATE: MAY 1994



PROPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)
 PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 116)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA
 PLAN VIEW
 AREAS 9 - 10 - 11

PROPOSED WORK
 W: MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS
 A1: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
 LANE AND FRATES ROAD (POST MILE 35.010 TO 36.5)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA
 APPLICATION BY: CITY OF PETALUMA
 SHEET: 11 OF 21 DATE: MAY 1994



PROPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 116)
 WIDENING PROJECT
 BY THE
 CITY OF PETALUMA

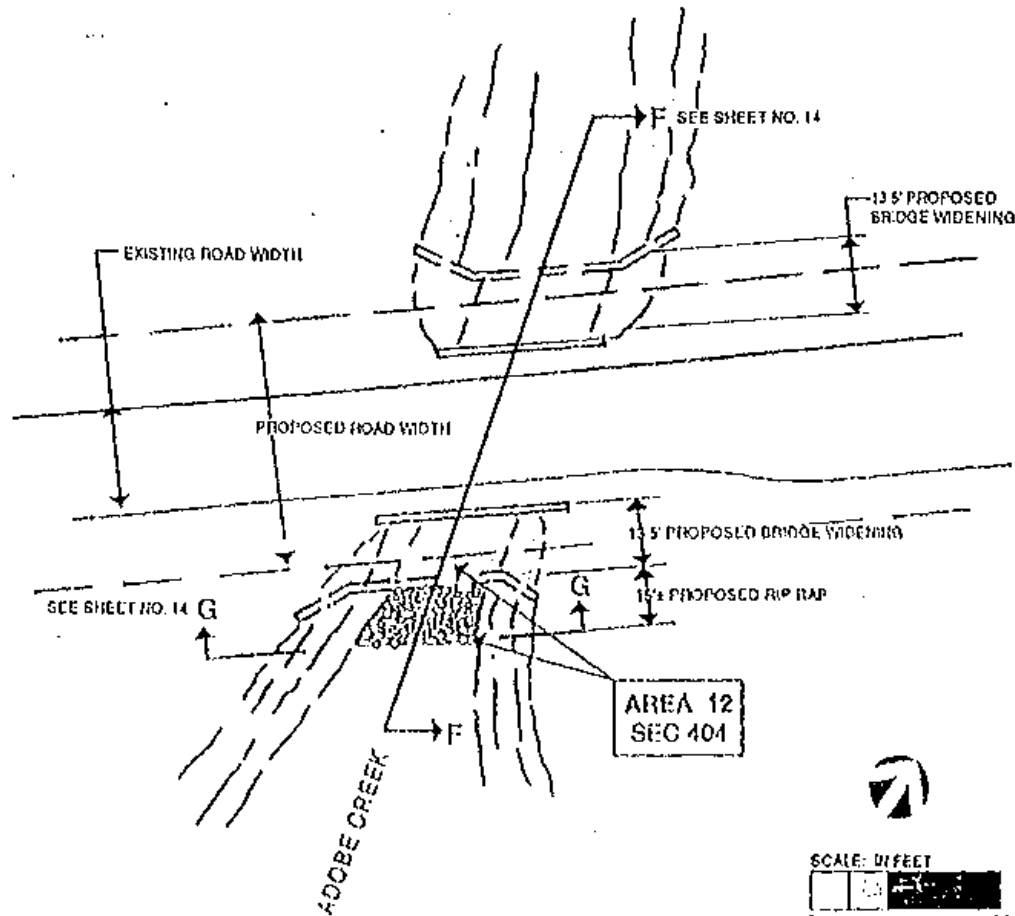
PLANVIEW
 AREA 12

PROPOSED WORK
 IS: MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
 LANE AND FRATES ROAD (POST MILE 35.0 TO 36.5),
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

SHEET 12 OF 24 DATE: MAY 1994



SCALE: IN FEET



NOTE:
CHANNEL BED AT
ELEVATION OF
+12'; ABOVE HTL
OF +4.7' NGVD.

PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (M.S.C.)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBEE CREEK.

LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF PETALUMA

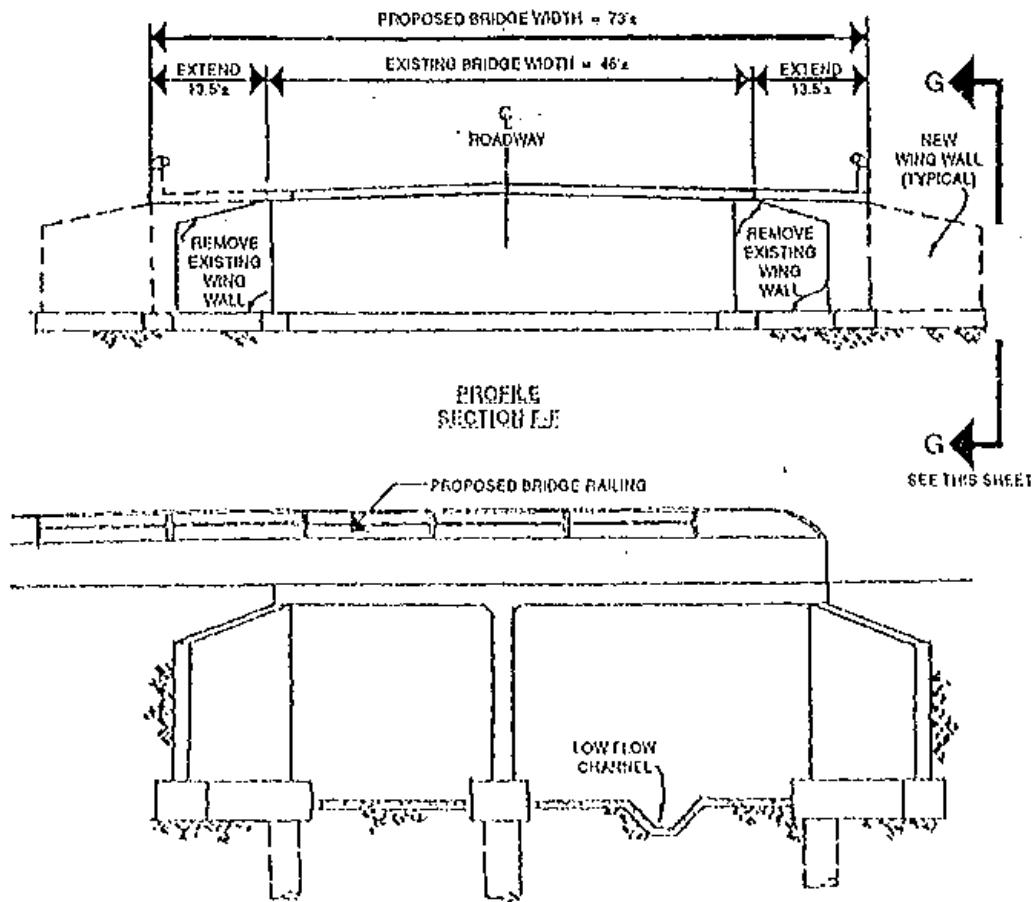
ADOBEE CREEK
BRIDGE EXTENSION AT
AREA 12

PROPOSED WORK
III) MCCOY CREEK, ADOBEE CREEK AND
ROADSIDE DRAINAGE AREAS

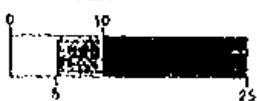
A1: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LANE AND STATE STREET (POST MILE 35.0 TO 35.5)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

SHEET 13 OF 21 DATE: MAY 1994



SCALE IN FEET



SOUTH ELEVATION SECTION G-G

NOTE:
CHANNEL BED AT ELEVATION
OF +12.0; ABOVE IRL OF +1.7'
NGVD.

PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADDOE CREEK.

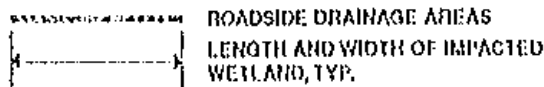
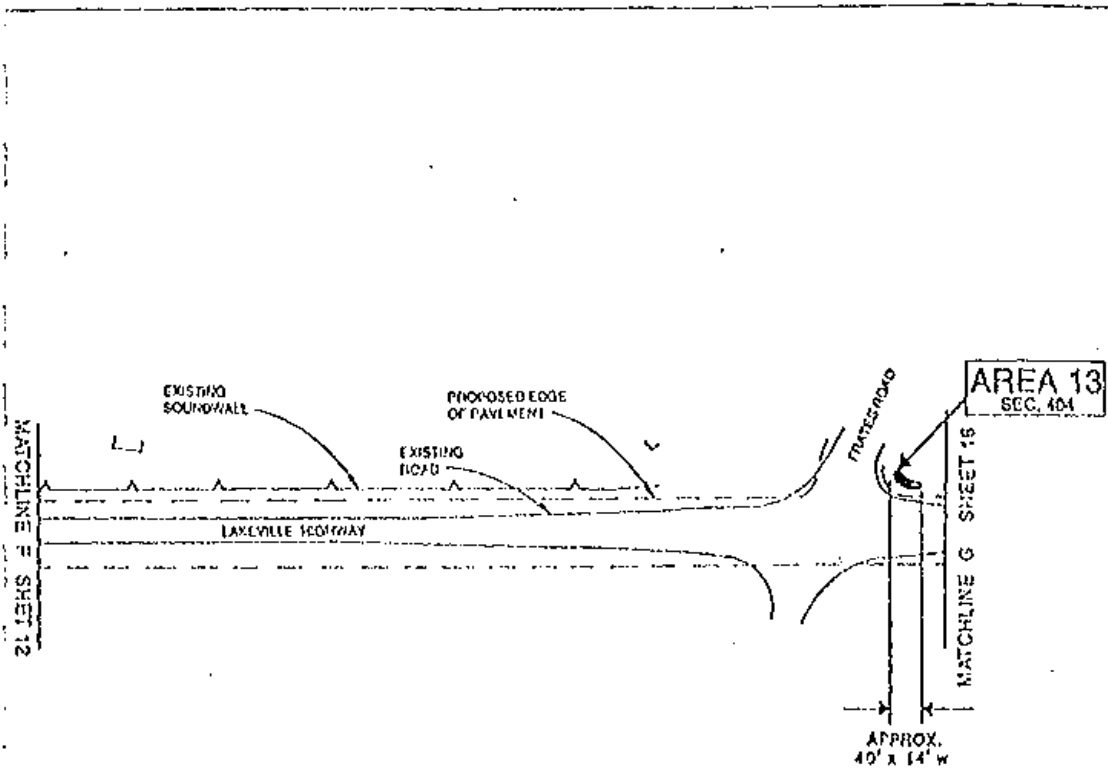
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
REIHC
CITY OF PETALUMA

ADDOE CREEK BRIDGE
EXTENSION PROJECT
AREA 12

PROPOSED WORK
RE: MCDOWELL CREEK, ADDOE CREEK AND
ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LAKE AND FRATES ROAD (POST MILE 15.0 TO 26.5)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATOR: CITY OF PETALUMA
SHEET 14 OF 21 DATE: MAY 1994



PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADobe CREEK

LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
OF THE
CITY OF PETALUMA

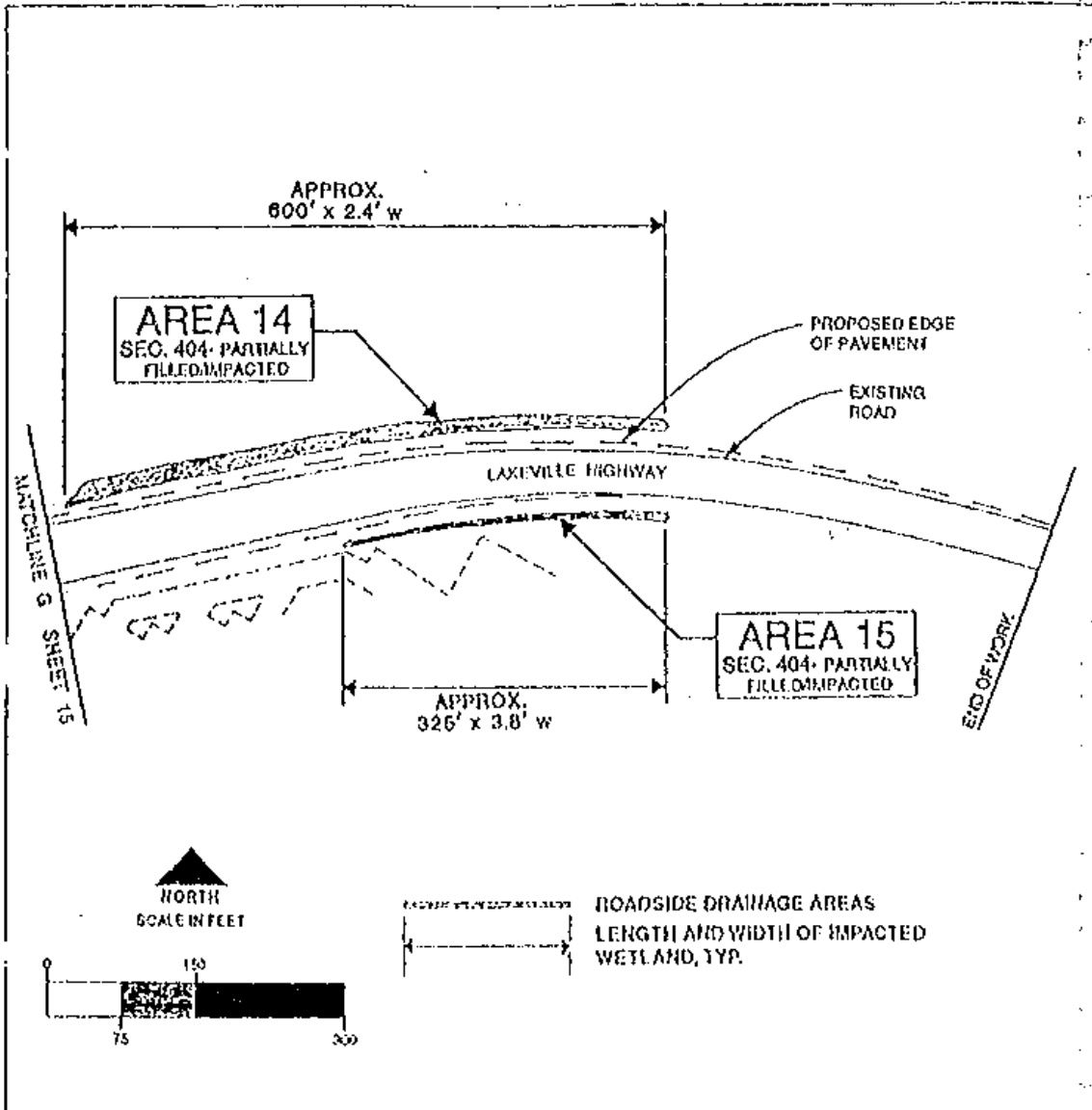
PLAN VIEW
AREA 13

PROPOSED WORK
III: MCDOWELL CREEK, ADobe CREEK AND
ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CADFIELD
LAKE AND FRATES ROAD (POST MILE 35.0 TO 36.1)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

SHEET 15 OF 21 DATE: MAY 1994



PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATE: NOV 0 (MS)

PROPOSED ROADWIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK

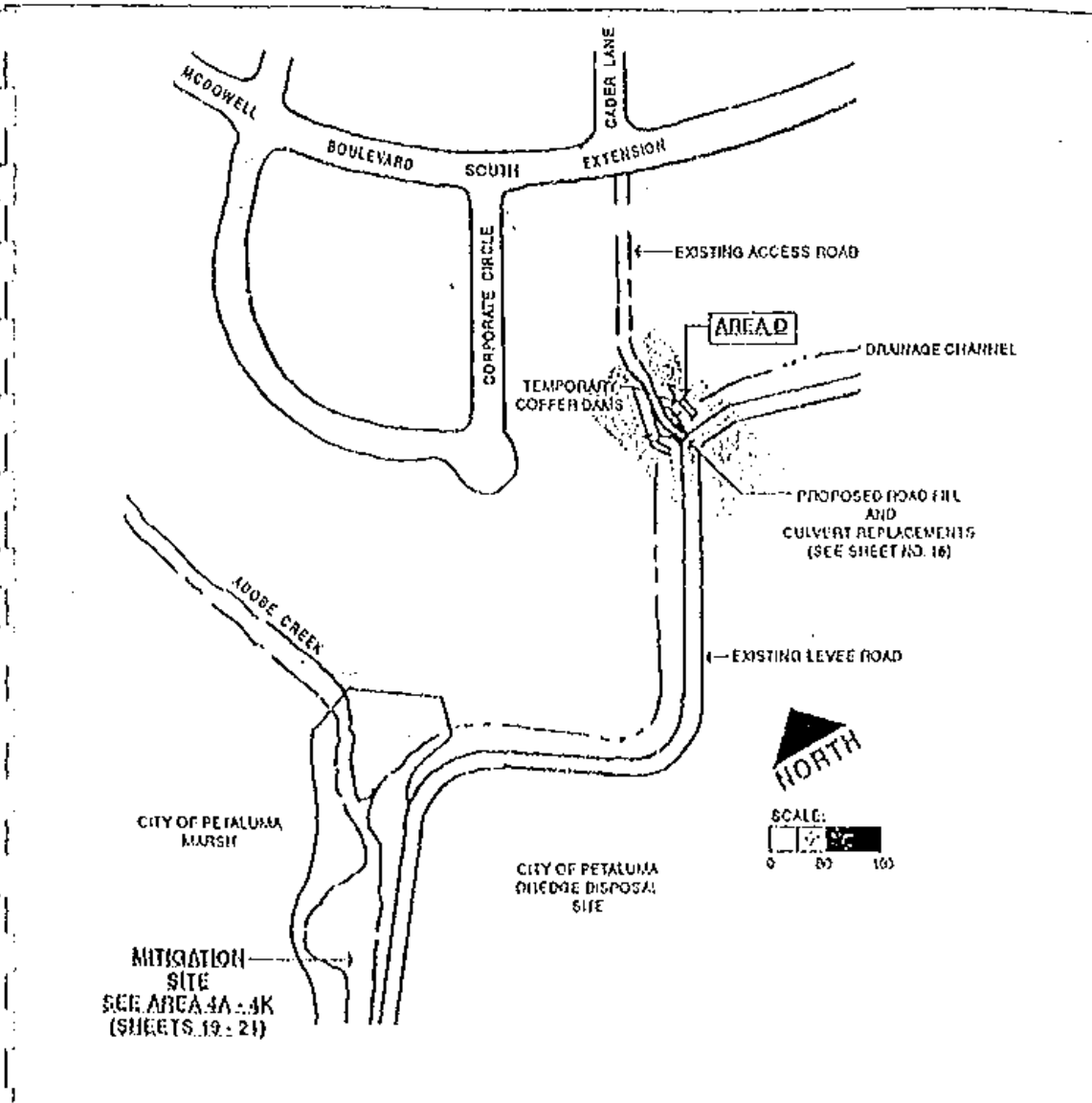
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF FETALUMA

PLAN VIEW
AREAS 14 AND 15

PROPOSED WORK
IN: MCDOWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CARROLL
LANE AND STATE ROAD (POST MILE 35.0 TO 36.0)
CITY OF FETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICANT BY: CITY OF FETALUMA
SHEET 11 OF 21 DATE: MAY 1994



PROPOSE
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 ALUM; NGVD (IASL)

PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK.

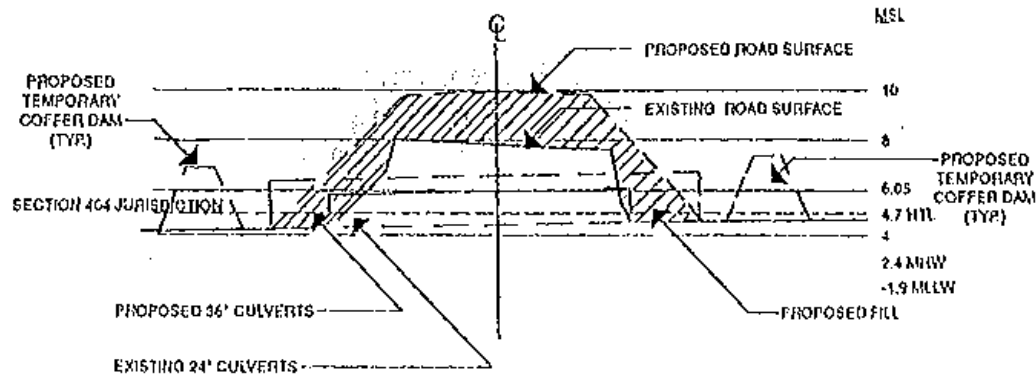
LAKEVILLE
 HIGHWAY
 (STATE ROUTE 110)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA
PLAN VIEW
 ACCESS ROAD TO
 MITIGATION SITE
 AREA D

PROPOSED WORK
 IN: MCCOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CARFIELD
 LANE AND HILLS ROAD (POST MILE 35.070 TO 36.0)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA

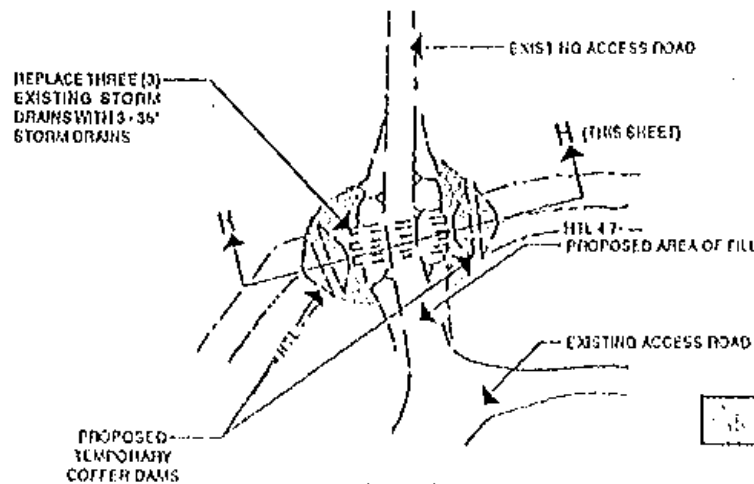
APPLICATION BY: CITY OF PETALUMA

SHEET: 17 OF 21 DATE: MAY 1994



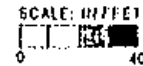
SECTION H-H

SCALE: H.T.S



NOTE:
MFL 42.9 IS BELOW
CHANNEL BED EL-
EVIATION OF 4.0

SECTION 404 JURIS-
DICTION (AREAS A'
OR BELOW 4.7 NGVD)



PLAN VIEW

PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK.

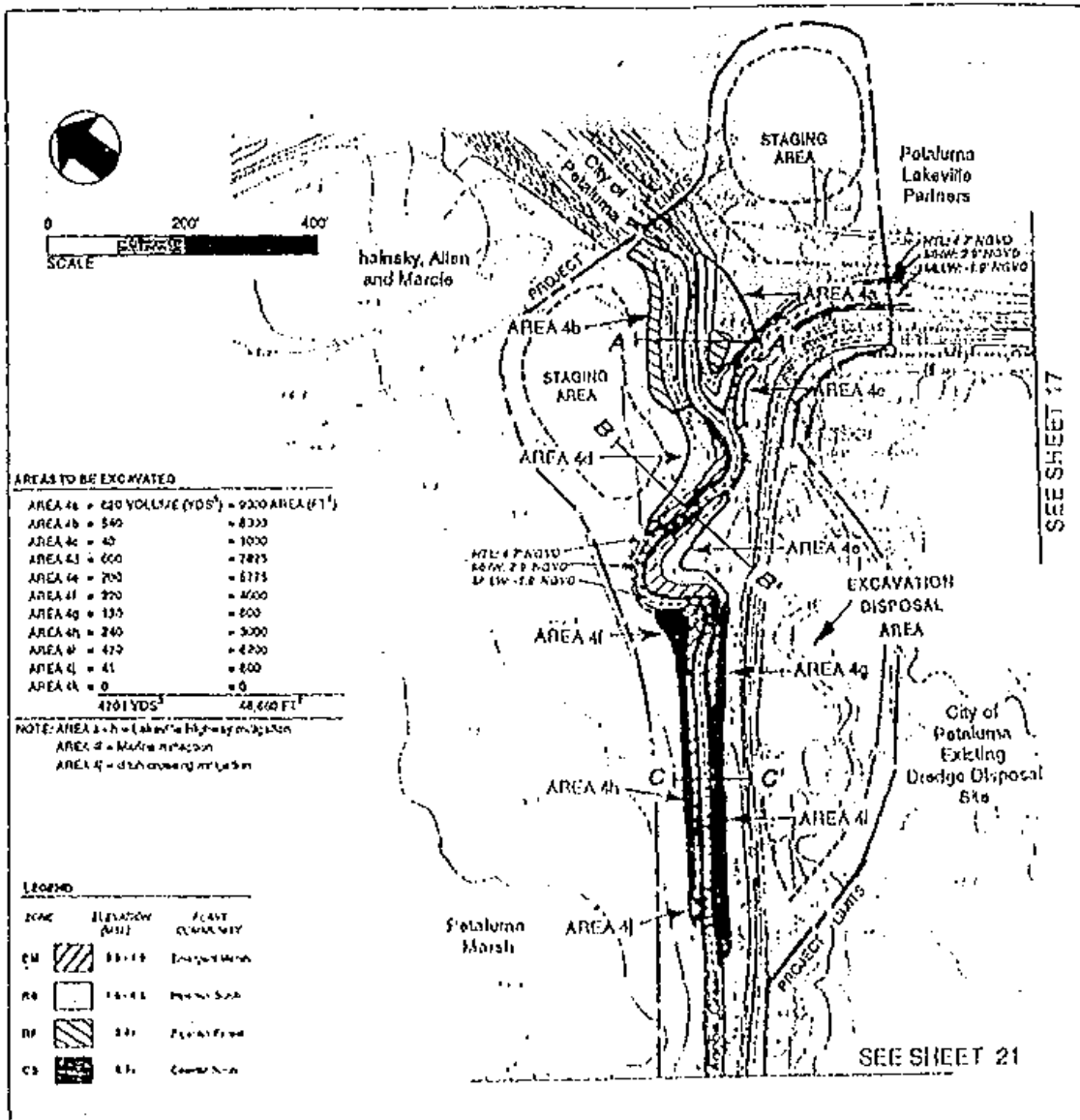
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF PETALUMA
CULVERT REPLACEMENT
FOR ACCESS ROAD
AREA D

PROPOSED WORK
IN: MCCOY CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
LAKE AND FRATES ROAD (POST MILE 35.0 TO 36.5)
CITY OF PETALUMA, SOLICHA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

SHEET: 18 OF 21 DATE: MAY 1994



AREAS TO BE EXCAVATED

AREA 4a	= 420 VOLUME (YDS ³) = 9200 AREA (FT ²)
AREA 4b	= 540 = 8333
AREA 4c	= 40 = 1000
AREA 4d	= 660 = 7875
AREA 4e	= 700 = 8775
AREA 4f	= 220 = 4000
AREA 4g	= 135 = 800
AREA 4h	= 240 = 3000
AREA 4i	= 470 = 4200
AREA 4j	= 41 = 800
AREA 4k	= 0 = 0
4701 YDS³ 44,660 FT²	

NOTE: AREA 4-h = (above the Highway on right side)
 AREA 4-i = Middle of road
 AREA 4-j = ditch covering area 4-h

LEGEND

ZONE	ELEVATION (MSL)	PLANT COMMUNITY
EM	15-19	Emergent Marsh
RA	15-11	Redwood Swamp
BF	20	Bay Forest
CS	15	Coastal Scrub

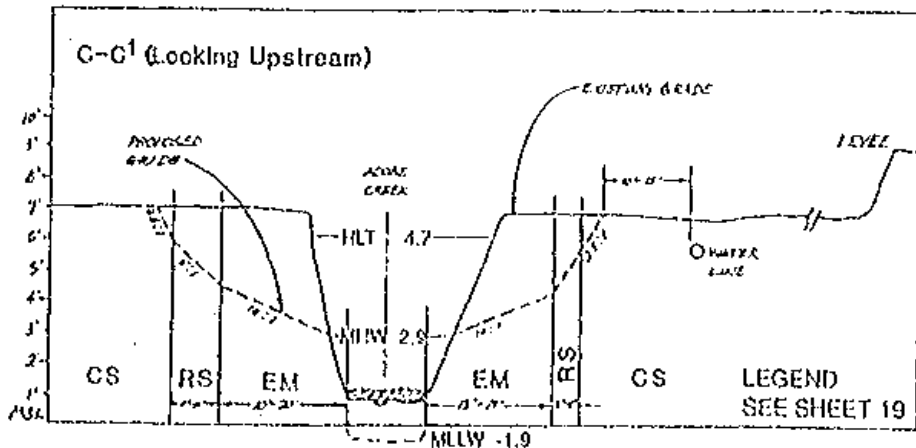
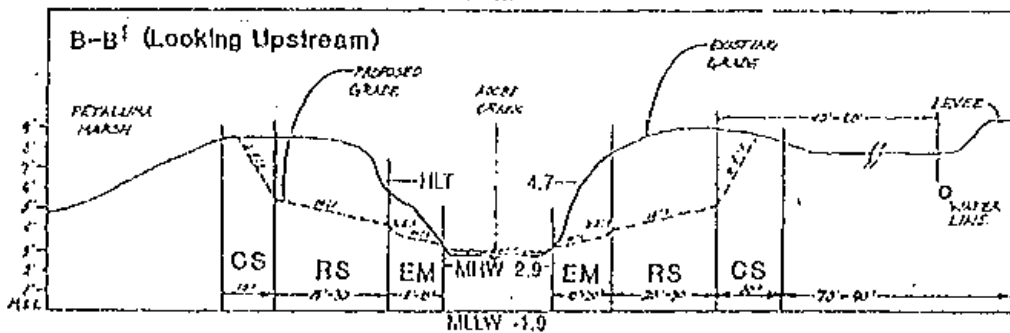
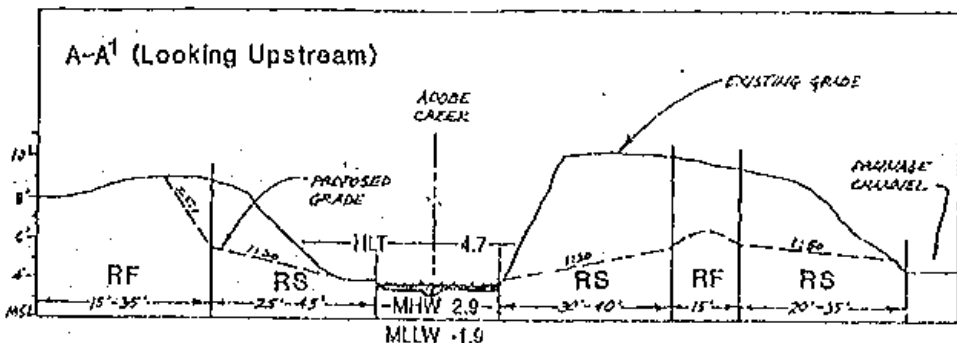
PROPOSED
 REDUCE TRAFFIC CONGESTION AND
 IMPROVE HIGHWAY SAFETY
 DATUM: NGVD (MSL)
 PROPOSED ROAD WIDENING AND FILL
 ALONG LAKEVILLE HIGHWAY AND
 WETLAND MITIGATION ALONG
 ADOBE CREEK

LAKEVILLE
 HIGHWAY
 (STATE ROUTE 116)
 WIDENING PROJECT
 IN THE
 CITY OF PETALUMA
**WETLAND MITIGATION SITE
 (MIDDLE ADOBE)
 AREAS 4A THRU 4J**

PROPOSED WORK
 ON MCDOWELL CREEK, ADOBE CREEK AND
 ROADSIDE DRAINAGE AREAS
 AT: LAKEVILLE HIGHWAY BETWEEN CAULFIELD
 LANE AND FINNIES ROAD (POST MILE 35.0 TO 36.5)
 CITY OF PETALUMA, SONOMA COUNTY,
 CALIFORNIA
 APPLICATION BY: CITY OF PETALUMA
 SHEET: 19 OF 21 DATE: MAY 1994

SEE SHEET 17

SEE SHEET 21



PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
DATUM: NGVD (MSL)

PROPOSED ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION ALONG
ADOBE CREEK

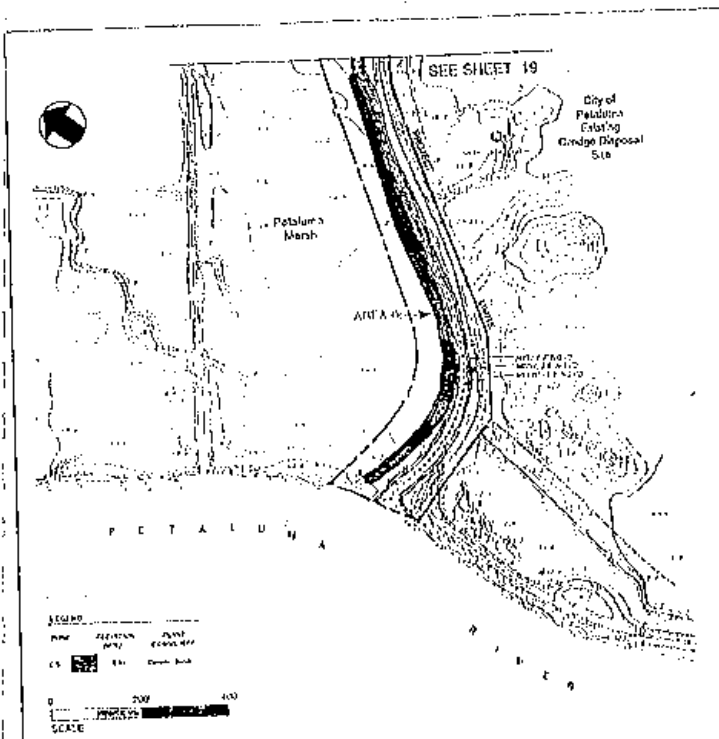
LAKEVILLE
HIGHWAY
(STATE ROUTE 116)
WIDENING PROJECT
IN THE
CITY OF PETALUMA
SECTIONS
WETLAND MITIGATION SITE
AREAS A, B, AND C

PROPOSED WORK
B: MCDOWELL CREEK, ADOBE CREEK AND
ROADSIDE DRAINAGE AREAS

A: LAKEVILLE HIGHWAY BETWEEN CALIFIELD
LAKE AND FRATE'S ROAD (POST MILE 35.0 TO 36.0)
CITY OF PETALUMA, SONOMA COUNTY,
CALIFORNIA

APPLICATION BY: CITY OF PETALUMA

SHEET: 20 OF 21 DATE: MAY 1994



PROPOSE
REDUCE TRAFFIC CONGESTION AND
IMPROVE HIGHWAY SAFETY
(AREA NGVD (MSL))

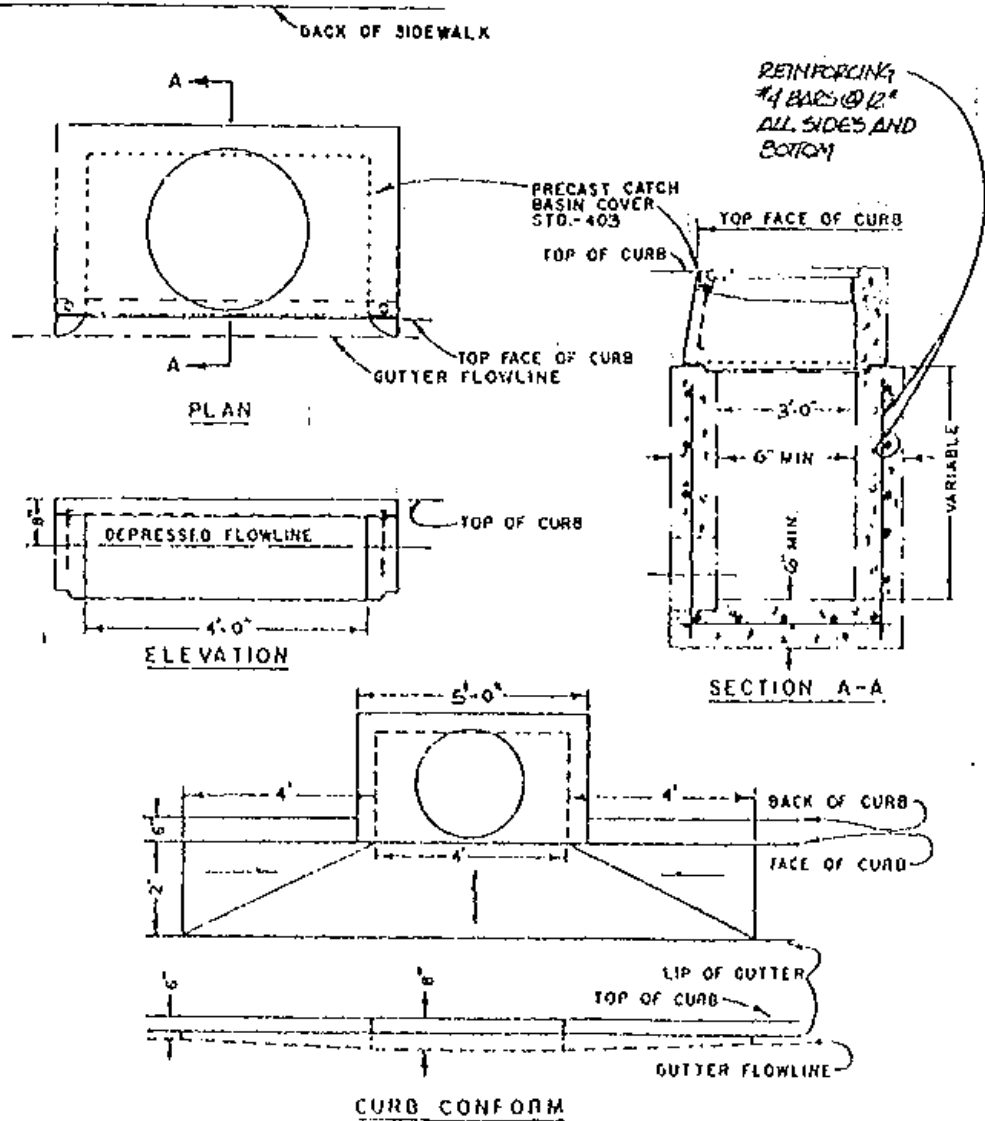
PROPOSE ROAD WIDENING AND FILL
ALONG LAKEVILLE HIGHWAY AND
WETLAND MITIGATION AT CREEK
AND LAKEVILLE

LAKEVILLE
HIGHWAY
(STATE ROUTE 194)
WIDENING PROJECT
IN THE
CITY OF PETALUMA
WETLAND MITIGATION SITE
(FLOWEL AREA)
AREA AK

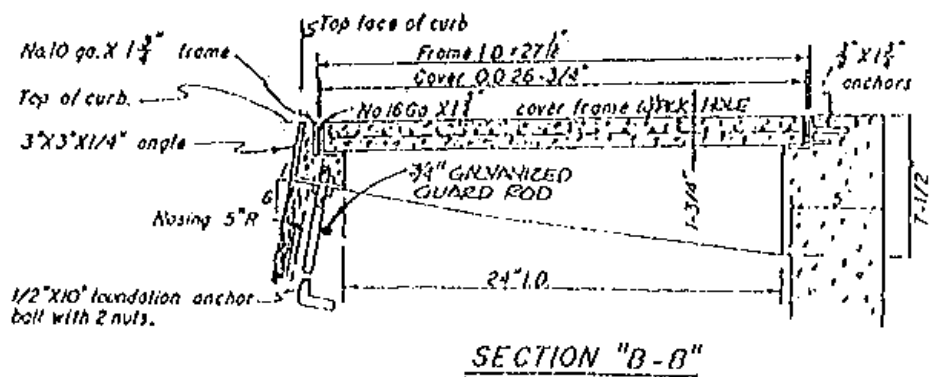
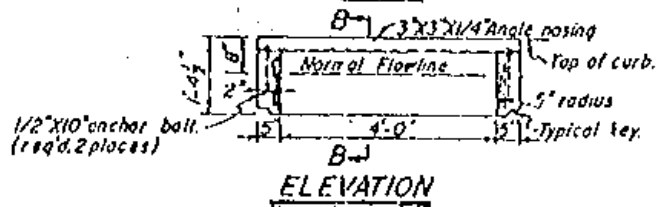
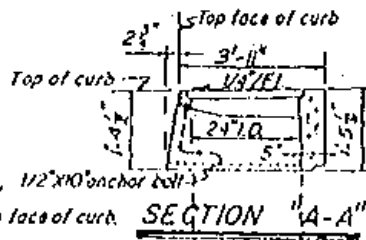
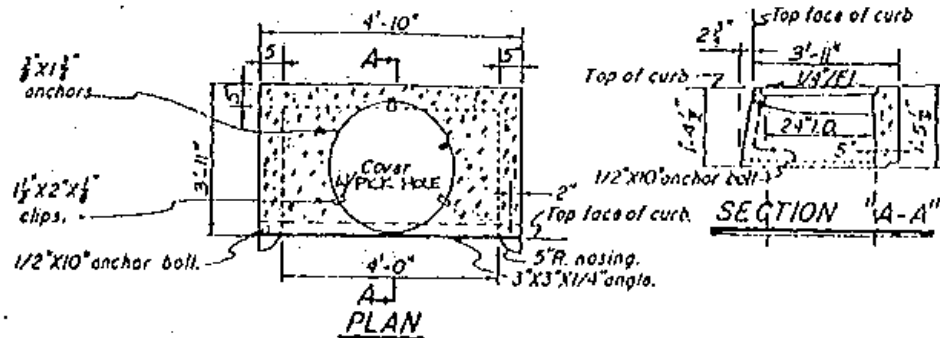
PROPOSED WORK
II. HIGGOWELL CREEK, AGONIC CREEK AND
ROADSIDE DRAINAGE AREAS
AR. LAKEVILLE HIGHWAY BETWEEN CALT LEE
LAKE AND PALLE'S FISH-HOSTABLE 27-02030-2
CITY OF PETALUMA, CALIFORNIA
PREPARED BY: COLVIN & BALSALIMA
SHEET 21 OF 21 DATE MAY 1953

SECTION V

CITY OF PETALUMA
STANDARD
PLANS



CITY OF PETALUMA		
TYPE "A" CATCH BASIN		
AND N.T.S.	DATE	4/15/92
DRAWN BY	APPROVED BY	FIGURE NO.
SR.	<i>J. H. Harris</i>	401

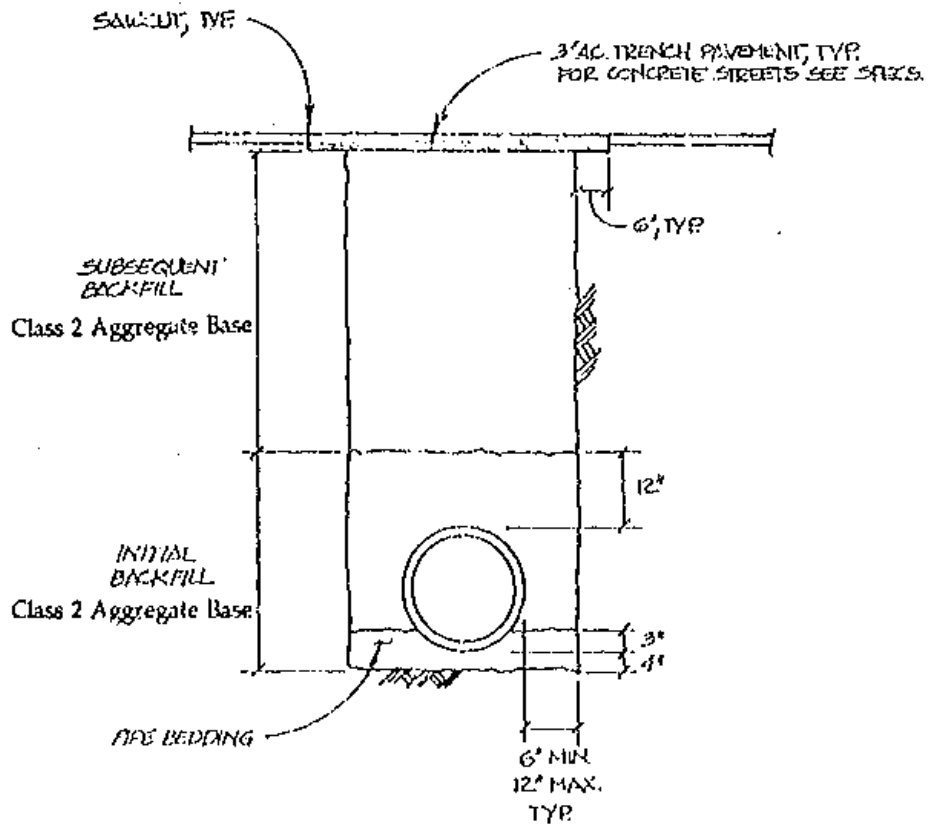


- NOTES
1. The Contractor, at his option, may use a fiberglass liner and cast the catch basin top in place.
 2. A cast iron frame ring may be substituted for the galvanized frame for the cover opening provided that the frame fulfills as shown.

CITY OF PETALUMA

PRECAST
CATCH BASIN COVER

DATE	M.T.S.	DATE	4/15/92
DRAWN BY	S.R.	APPROVED BY	[Signature]
		PROJECT NO.	403



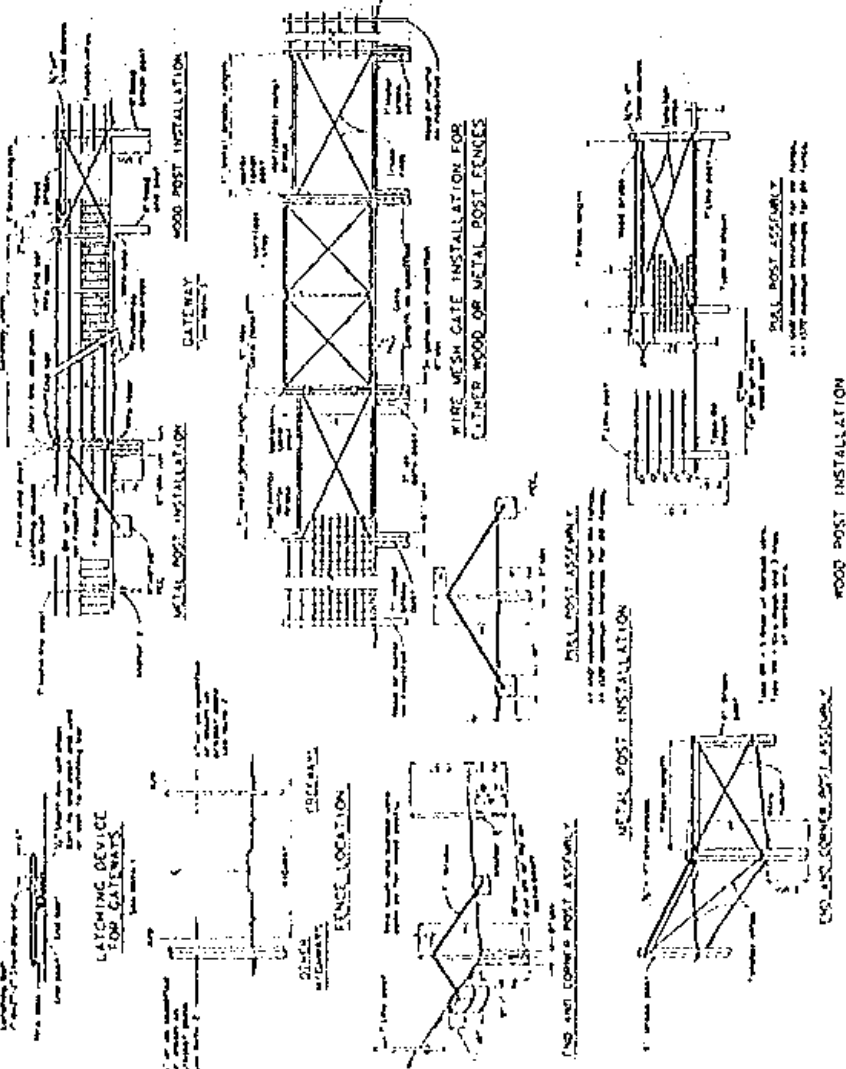
CITY OF PETALUMA	
TRENCH DETAIL	
SCALE N.T.S.	DATE 4/17/92
DRAWN BY C.H.S.	CHECKED BY <i>[Signature]</i> 408

PROJECT NO. 100-1000
 DRAWING NO. 100-1000
 DATE 10/1/50
 DRAWN BY [Signature]
 CHECKED BY [Signature]


WIRE MESH GATE POST	
TYPE	3" x 3" x 1/4"
SECTION	3" x 3" x 1/4"
LENGTH	10'
WEIGHT	100 LBS.
PRICE	10.00
DATE	10/1/50
BY	AB6
FOR	STG. PLAN AB6

NOTES

1. Posts and rails and bar should be treated with preservative and galvanized.
2. Posts should be 3" or 4" diameter depending on material and/or length to the fence. Posts to support gates should be 4" or 6" diameter.
3. Posts to be used when specified in the contract specifications.
4. Posts should be set in concrete or masonry.
5. Posts should be set in concrete or masonry.



STATE OF CALIFORNIA
 DEPARTMENT OF HIGHWAYS
BARBED WIRE AND WIRE MESH FENCES
 1/4" SCALE
 AB6



July 2, 1957

CURB QUANTITIES

TYPE 1	1.0000
TYPE 2	1.0000
TYPE 3	1.0000
TYPE 4	1.0000
TYPE 5	1.0000
TYPE 6	1.0000
TYPE 7	1.0000
TYPE 8	1.0000
TYPE 9	1.0000
TYPE 10	1.0000
TYPE 11	1.0000
TYPE 12	1.0000
TYPE 13	1.0000
TYPE 14	1.0000
TYPE 15	1.0000
TYPE 16	1.0000
TYPE 17	1.0000
TYPE 18	1.0000
TYPE 19	1.0000
TYPE 20	1.0000
TYPE 21	1.0000
TYPE 22	1.0000
TYPE 23	1.0000
TYPE 24	1.0000
TYPE 25	1.0000
TYPE 26	1.0000
TYPE 27	1.0000
TYPE 28	1.0000
TYPE 29	1.0000
TYPE 30	1.0000
TYPE 31	1.0000
TYPE 32	1.0000
TYPE 33	1.0000
TYPE 34	1.0000
TYPE 35	1.0000
TYPE 36	1.0000
TYPE 37	1.0000
TYPE 38	1.0000
TYPE 39	1.0000
TYPE 40	1.0000
TYPE 41	1.0000
TYPE 42	1.0000
TYPE 43	1.0000
TYPE 44	1.0000
TYPE 45	1.0000
TYPE 46	1.0000
TYPE 47	1.0000
TYPE 48	1.0000
TYPE 49	1.0000
TYPE 50	1.0000

AS PAVED QUANTITIES

TYPE 1	1.0000
TYPE 2	1.0000
TYPE 3	1.0000
TYPE 4	1.0000
TYPE 5	1.0000
TYPE 6	1.0000
TYPE 7	1.0000
TYPE 8	1.0000
TYPE 9	1.0000
TYPE 10	1.0000
TYPE 11	1.0000
TYPE 12	1.0000
TYPE 13	1.0000
TYPE 14	1.0000
TYPE 15	1.0000
TYPE 16	1.0000
TYPE 17	1.0000
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TYPE 37	1.0000
TYPE 38	1.0000
TYPE 39	1.0000
TYPE 40	1.0000
TYPE 41	1.0000
TYPE 42	1.0000
TYPE 43	1.0000
TYPE 44	1.0000
TYPE 45	1.0000
TYPE 46	1.0000
TYPE 47	1.0000
TYPE 48	1.0000
TYPE 49	1.0000
TYPE 50	1.0000

TABLE OF QUANTITIES

TYPE	AS PAVED QUANTITIES	CURB QUANTITIES
1	1.0000	1.0000
2	1.0000	1.0000
3	1.0000	1.0000
4	1.0000	1.0000
5	1.0000	1.0000
6	1.0000	1.0000
7	1.0000	1.0000
8	1.0000	1.0000
9	1.0000	1.0000
10	1.0000	1.0000
11	1.0000	1.0000
12	1.0000	1.0000
13	1.0000	1.0000
14	1.0000	1.0000
15	1.0000	1.0000
16	1.0000	1.0000
17	1.0000	1.0000
18	1.0000	1.0000
19	1.0000	1.0000
20	1.0000	1.0000
21	1.0000	1.0000
22	1.0000	1.0000
23	1.0000	1.0000
24	1.0000	1.0000
25	1.0000	1.0000
26	1.0000	1.0000
27	1.0000	1.0000
28	1.0000	1.0000
29	1.0000	1.0000
30	1.0000	1.0000
31	1.0000	1.0000
32	1.0000	1.0000
33	1.0000	1.0000
34	1.0000	1.0000
35	1.0000	1.0000
36	1.0000	1.0000
37	1.0000	1.0000
38	1.0000	1.0000
39	1.0000	1.0000
40	1.0000	1.0000
41	1.0000	1.0000
42	1.0000	1.0000
43	1.0000	1.0000
44	1.0000	1.0000
45	1.0000	1.0000
46	1.0000	1.0000
47	1.0000	1.0000
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49	1.0000	1.0000
50	1.0000	1.0000

CURBS, DIKES AND DRIVEWAYS

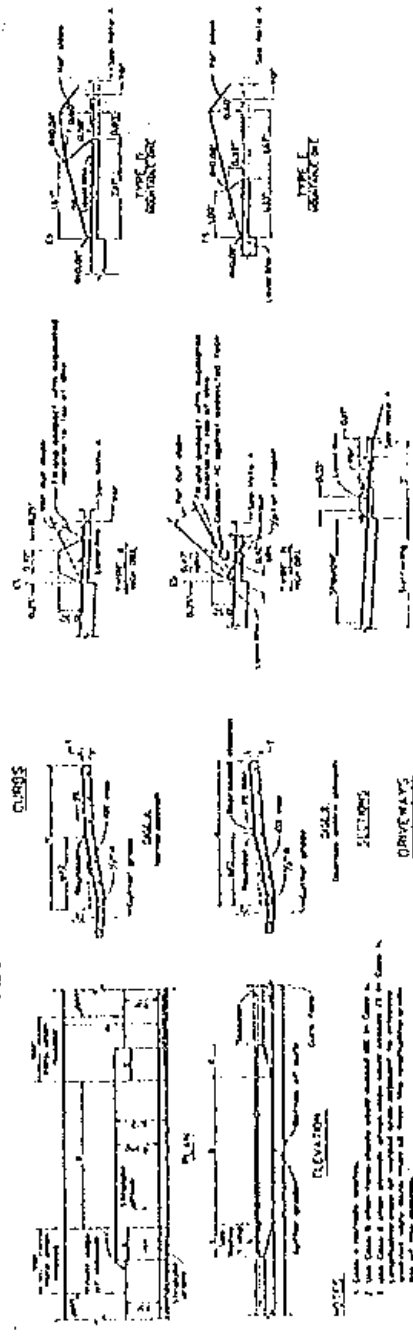
A87

ASPHALT CONCRETE DIKES

NOTE: 1. Standard Section of ASPHALT CONCRETE DIKES, Type 11.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

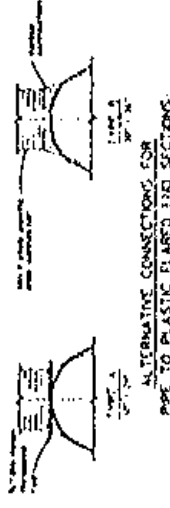
MS 1046



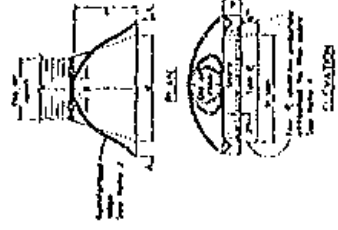
DATE: 11/19/71
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]



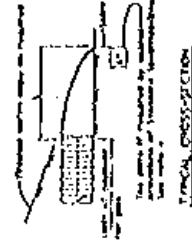
ALTERNATIVE CONNECTIONS FOR PIPE TO METAL FLARED END SECTIONS



ALTERNATIVE CONNECTIONS FOR PIPE TO PLASTIC FLARED END SECTIONS



FLARED END SECTION CONNECTION TO RCP



TYPICAL CONNECTION

CONNECTION TYPE	MINIMUM WALL THICKNESS (INCHES)	MINIMUM FLARE DIAMETER (INCHES)	MINIMUM FLARE LENGTH (INCHES)
FLARED END SECTION TO RCP	0.125	1.5	6
FLARED END SECTION TO CORRUGATED METAL	0.125	1.5	6
FLARED END SECTION TO PLASTIC	0.125	1.5	6

CONNECTION TYPE	MINIMUM WALL THICKNESS (INCHES)	MINIMUM FLARE DIAMETER (INCHES)	MINIMUM FLARE LENGTH (INCHES)
FLARED END SECTION TO RCP	0.125	1.5	6
FLARED END SECTION TO CORRUGATED METAL	0.125	1.5	6
FLARED END SECTION TO PLASTIC	0.125	1.5	6

NOTE

1. Flared ends shall be made using pipe and pipe flange fittings.
2. Flared ends shall be made using pipe and pipe flange fittings.
3. Flared ends shall be made using pipe and pipe flange fittings.
4. Flared ends shall be made using pipe and pipe flange fittings.
5. Flared ends shall be made using pipe and pipe flange fittings.
6. Flared ends shall be made using pipe and pipe flange fittings.
7. Flared ends shall be made using pipe and pipe flange fittings.
8. Flared ends shall be made using pipe and pipe flange fittings.
9. Flared ends shall be made using pipe and pipe flange fittings.
10. Flared ends shall be made using pipe and pipe flange fittings.

STATE OF CALIFORNIA
 DEPARTMENT OF HIGHWAYS
**METAL AND PLASTIC
 FLARED END SECTIONS**
 NO SCALE
D94A

FLARED END SECTIONS FOR
 CORRUGATED METAL AND PLASTIC PIPE CULVERTS

GENERAL NOTES:

1. All wiring methods and equipment construction shall conform to the national Electrical Code.
2. All conduit to be used shall be a minimum of 2" diameter, except from each street light to the adjacent pull box which may be 1" diameter PVC or metal, and shall have the following cover from top of conduit.
 - A. Within sidewalk of parkway areas: 2" - 0" min. Schedule 40 P.V.C.
 - B. Within roadway areas: 3" - 0" min. Schedule 80 P.V.C.
3. All metal conduit and other metal parts shall be continuously bonded and grounded.
4. All bends and/or offsets shall be made with factory sections.
5. Unless otherwise approved by the City Engineer, a No. 5 pull box (State Standard ES-0) shall be used at all street light standards.
6. All pull boxes shall be per State Standard ES-8.
7. Junction boxes to be not more than 200' apart on long runs.
8. When pull boxes are subject to vehicular traffic, they shall be set on concrete footings and cast iron traffic covers shall be installed.
9. All splices to be approved solderless waterproof connectors of proper size. (Example: split bolt plus tape plus coating).
10. All empty conduits shall have a 1/4" nylon pull rope provided inside.
11. All conduits shall be sealed with an approved duct seal. Conduits stubbed for future extensions shall be capped.

CITY OF PETALUMA	
GENERAL NOTES	
SCALE: NONE	DATE: JAN. 1991
BY AD	APPROVED <i>[Signature]</i> 500

12. All street lighting projects are subject to approval by the City Traffic Engineer.
13. All pull box covers shall be secured with brass hold down bolts and inscribed, "Street Lighting".
14. Street light spacing shall be maintained per design criteria. Street light spacing shall be located at property lines when possible.
15. The minimum-average maintained foot-candles and uniformity ratio of all street lighting shall comply with design criteria.
16. All street lights equipped with a photocell control shall have the photocell oriented to the north.
17. All wire shall be THHN A.W.G. with the minimum size to be #8 except within Street Lighting Standards, shall be #10.

THE FOLLOWING NOTES DO NOT APPLY TO CITY-FUNDED PROJECTS:

18. Light poles on all streets other than minor streets or cul-de-sacs shall be galvanized steel standards in accordance with City standard plans. The pole heights shall be as delineated on the City Standards.
19. The developer/engineer shall make arrangements for service points with PG&E. The developer shall be responsible for all costs associated therewith which shall be paid directly to PG&E. The contractor shall verify the street light service point location(s) with PG&E prior to installation.
20. Developer shall install, in accordance with City standards.
21. New developments within an existing developed area shall install the entire lighting system, including luminaires.
22. All street light systems shall be designed for 120 volt service.

CITY OF PETALUMA	
GENERAL NOTES	
SCALE: NONE	DATE: JAN. 1991
CITY NO.	ENGINEER
001	<i>[Signature]</i>
	CITY NO. 600



23. The current to be used to determine conductor sizes shall be determined as follows:

$$\frac{\text{Total Wattage of Fixtures Served}}{\text{Service Voltage}} \times 3.5$$

CITY OF PETALUMA

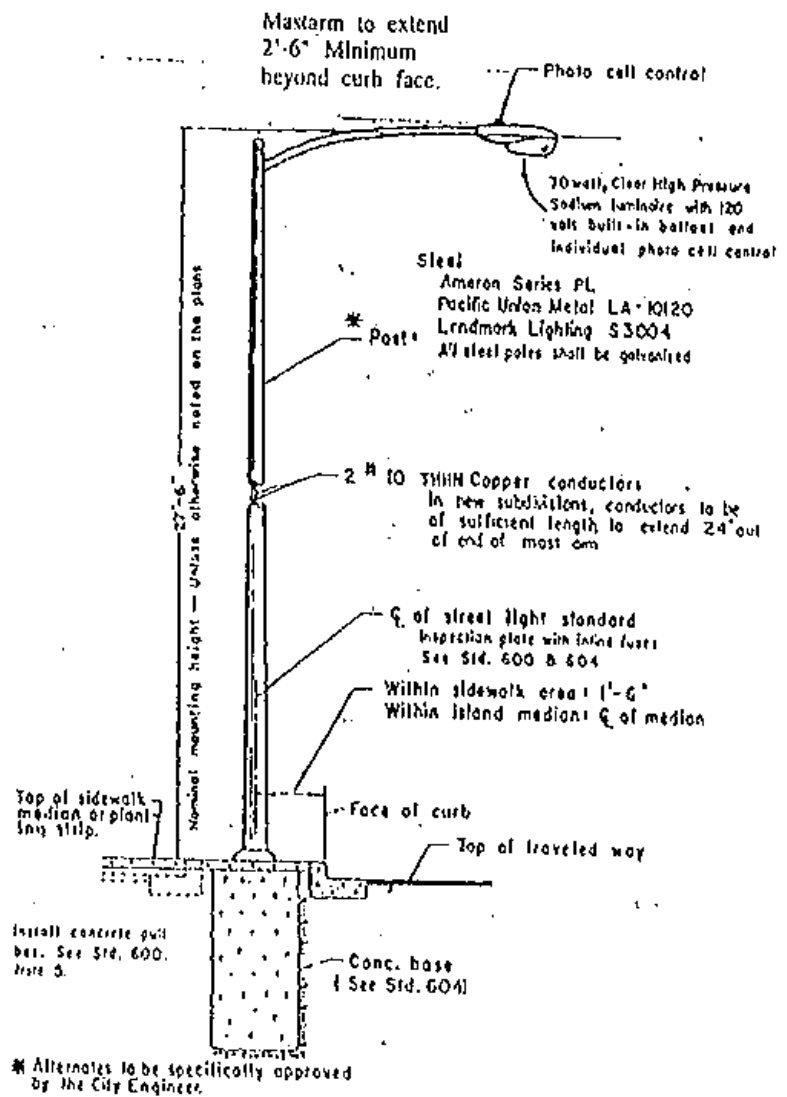
GENERAL NOTES

SCALE: NONE DATE: JAN. 1991



DATE: 1/1/91
APPROVED: *[Signature]*

FIG. NO.
600

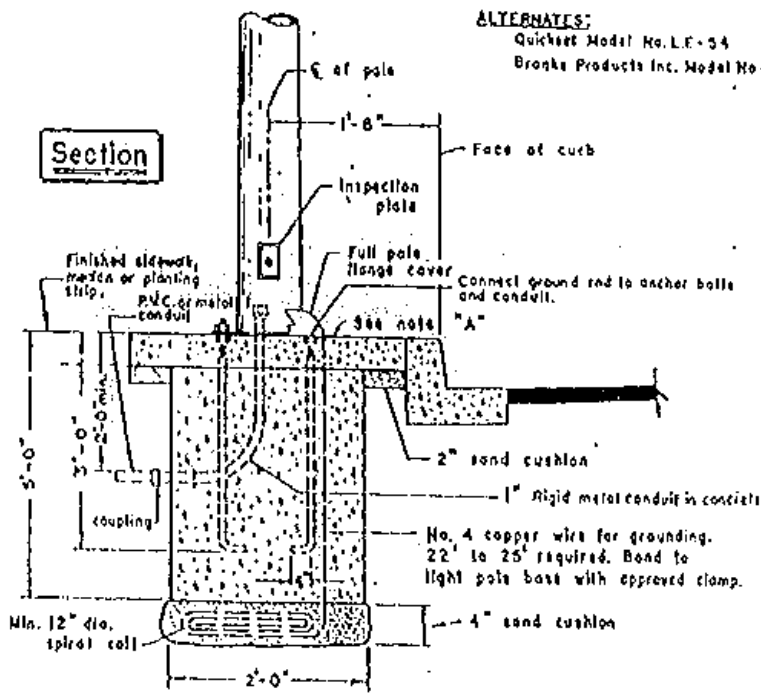


CITY OF PETALUMA
 STREET LIGHT
 STANDARD
 MINOR STREET

SCALE: NONE		DATE: Sept 1993	
DATE	APPROVED	DATE	NO.
	<i>[Signature]</i>		601

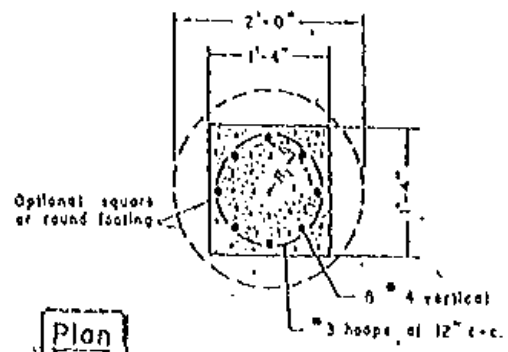


Section



ALTERNATES:
 Quickset Model No. LE-54
 Brooks Products Inc. Model No. 85C109

Concrete shall be class "A" P.C.C. Pour against undisturbed soil.

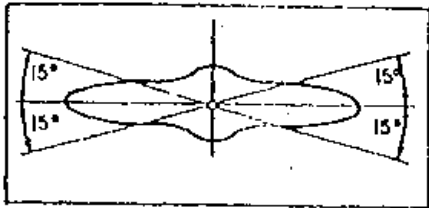


Plan

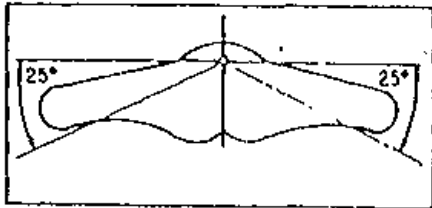
NOTES:
 A. In undeveloped areas, construct a 2' x 2' conc. pad, 4" thick. If round footing is poured, stop at the elevation of bottom of the sidewalk.

CITY OF PETALUMA	
CONCRETE FOOTING DETAILS	
SCALE: NONE	DATE: JAN. 1991
DESIGNED BY: <i>CAF</i>	CHECKED BY: <i>MO</i>
CITY NO. 604	

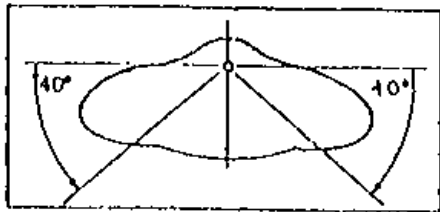
CITY AD



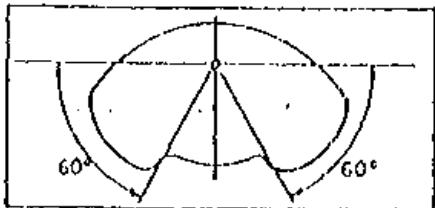
TYPE 1
CENTER OF STREET



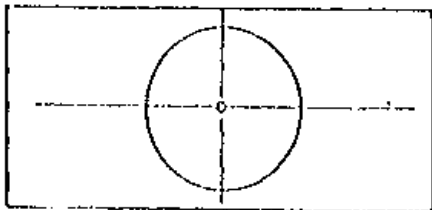
TYPE 2
SIDE MOUNTING
Standard for Minor Street unless noted
otherwise



TYPE 3
SIDE MOUNTING
Standard for Collector and Major Streets unless
noted otherwise



TYPE 4
SIDE MOUNTING



TYPE 5

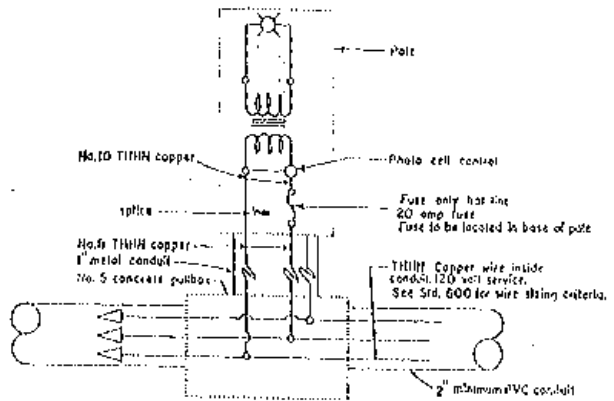
CITY OF PETALUMA

I.E.S. LIGHT PATTERNS

SCALE: NONE DATE: JAN. 1991



DESIGNED BY	APPROVED BY	DWG. NO.
	<i>[Signature]</i>	605



SCHEMATIC STREET LIGHT WIRING DIAGRAM

CITY OF PETALUMA	
STREET LIGHT WIRING DIAGRAM	
SCALE: NONE	DATE: JAN. 1991
DESIGNED BY <i>[Signature]</i>	DRAWN BY 606



AREA CLASS	ROADWAY CLASS	MIN. AVG. MAINTAINED F.C.	UNIFORMITY RATIO AVG.F.C./MIN.F.C.
RESIDENTIAL	LOCAL	0.2	4:1
	COLLECTOR	0.3	5:1
	MAJOR	0.75	3:1
URBAN	LOCAL	0.2	4:1
	COLLECTOR	0.3	5:1
	MAJOR	0.75	3:1
COMMERCIAL	COLLECTOR	0.3	5:1
	MAJOR	0.75	3:1

$$\text{AVERAGE MAINTAINED F.C. IS } F.C. = \frac{(L)(MF)(CU)}{W(S)}$$

FC = Illumination in footcandles
 LL = rated initial lamp lumens
 MF = maintenance factor
 CU = coefficient of utilization
 W = street width, curb to curb
 S = spacing of luminaires

MINIMUM F.C. IS $F.C_{min} = (fc)(LF)(MF)(CF)$
 FC_{min} = minimum point footcandles
 fc = row total footcandles (at darkest point)
 LF = lamp factor
 MF = maintenance factor
 CF = mounting height correction factor

$$\text{UNIFORMITY RATIO} = \frac{\text{AVERAGE FOOTCANDLES}}{\text{MINIMUM FOOTCANDLES}}$$

CITY OF PETALUMA

ROADWAY ILLUMINATION

SCALE: NONE

DATE: JAN. 1991



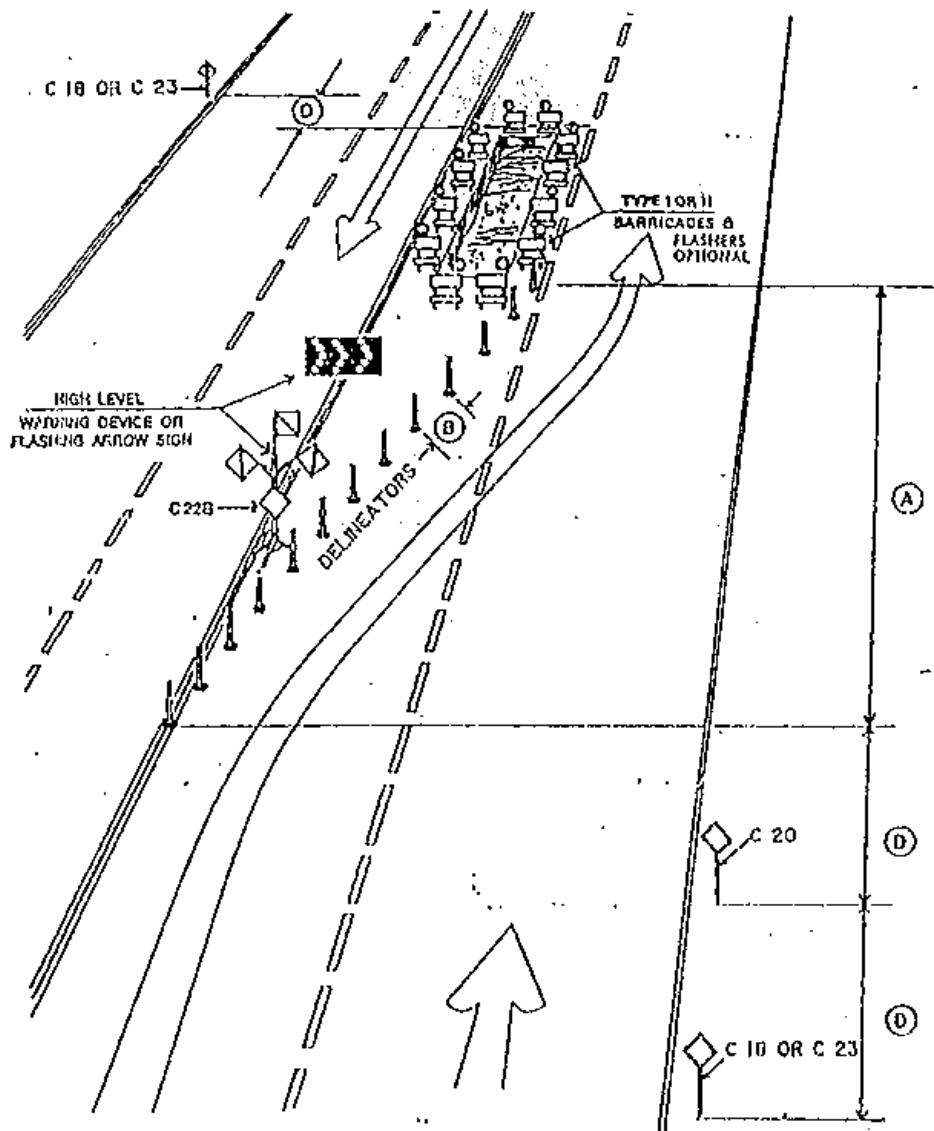
100
100

APPROVED

[Signature]

CITY NO

607



NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER

2. SEE STD. 7-11 FOR:

- (A) TAPER LENGTH
- (D) DELINEATOR SPACING-TRANSITIONS
- (D) SIGN SPACING



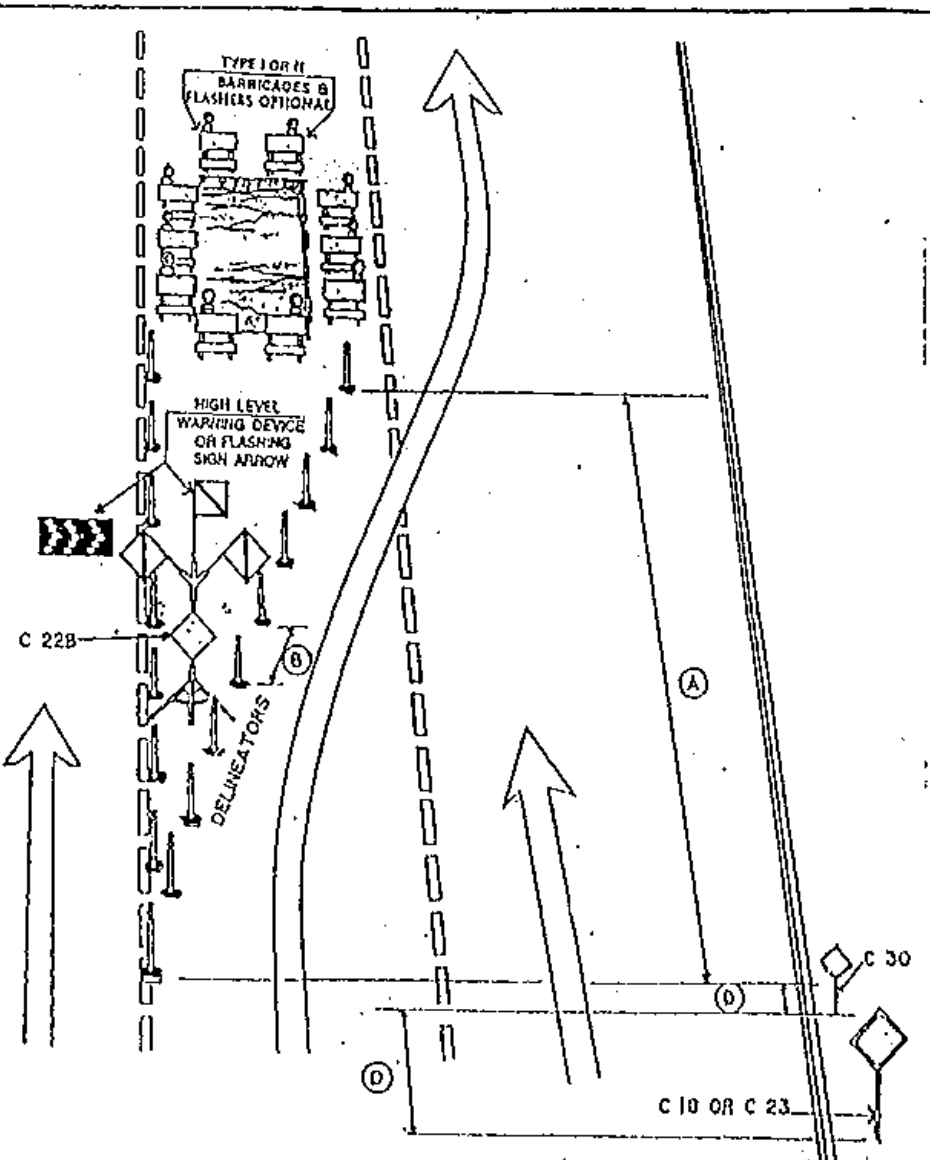
CITY OF PETALUMA

WORK AREA TRAFFIC CONTROL

LEFT LANE CLOSURE

SCALE: NONE DATE: JAN. 1991

DATE	APPROVED	DWG. NO.
OR	<i>efp</i>	740A



NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

2. SEE STD. 7-41 FOR:

- (A) TAPER LENGTH
- (B) DELINEATOR SPACING-TRANSITIONS
- (D) SIGN SPACING

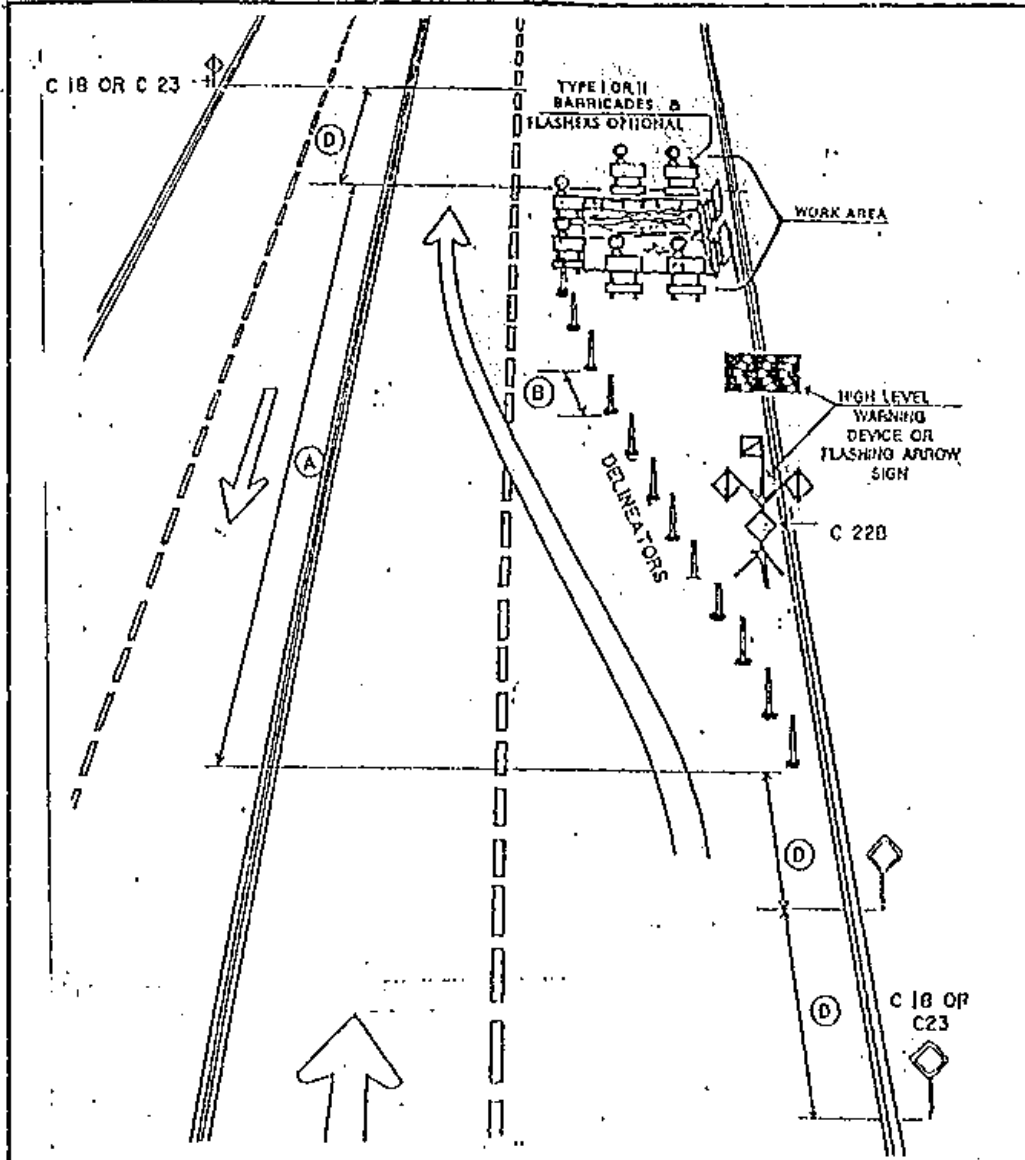


CITY OF PETALUMA

WORK AREA TRAFFIC CONTROL
MIDDLE LANE CLOSURE

SCALE: NONE DATE: JAN. 1991


741	APPROVED	741 40
01	<i>[Signature]</i>	740B

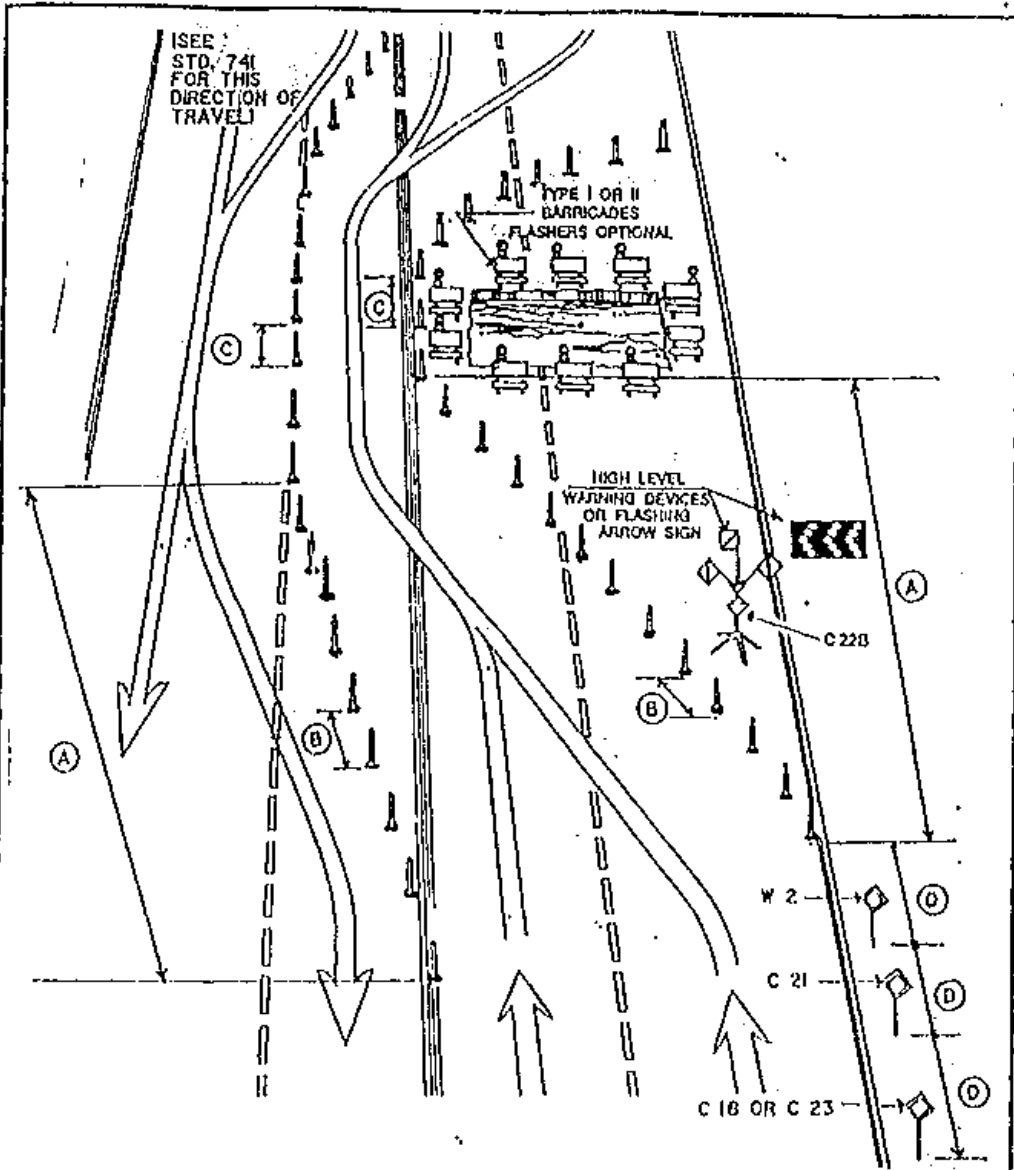


NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.
2. SEE STD. 741 FOR:
 - (A) TAPER LENGTH
 - (B) DELIMITOR SPACING-TRANSITIONS
 - (C) SIGN SPACING

CITY AD

CITY OF PETALUMA	
WORK AREA TRAFFIC CONTROL	
RIGHT LANE CLOSURE	
SCALE: NONE	DATE: JAN, 1991
BY CA 	ENG. NO. 740C

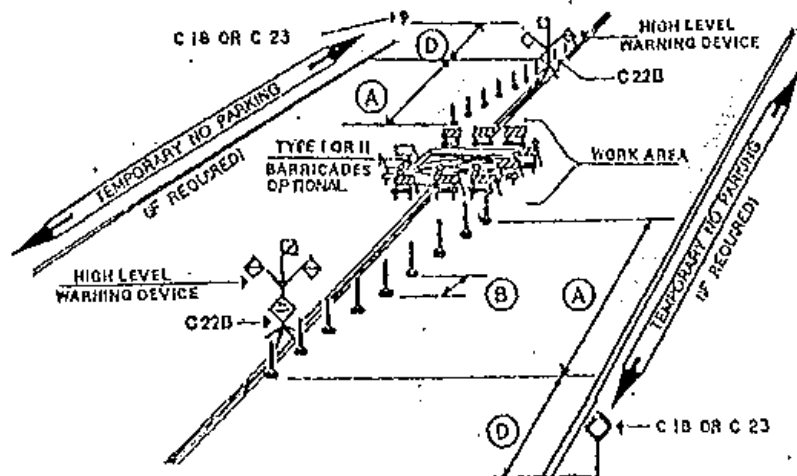


NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.
2. SEE STD. 741 FOR:
 - (A) TAPER LENGTH
 - (B) DELINEATOR SPACING-TRANSITIONS
 - (C) DELINEATOR SPACING-TANGENTS
 - (D) SIGN SPACING

CITY AD

CITY OF PETALUMA		
WORK AREA TRAFFIC CONTROL		
HALF-ROADWAY CLOSURE		
SCALE: NONE	DATE: JAN. 1991	
APP'G	DATE	LIC. NO.
<i>[Signature]</i>		740D



NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

2. SEE STD. 7411 FOR:

- (A) TAPER LENGTH
- (B) DELWEATOR SPACING-TRANSITIONS
- (D) SIGN SPACING

CITY OF PETALUMA

WORK AREA TRAFFIC CONTROL

WORK AREA IN CENTER OF STREET

SCALE: NONE

DATE: JAN. 1991

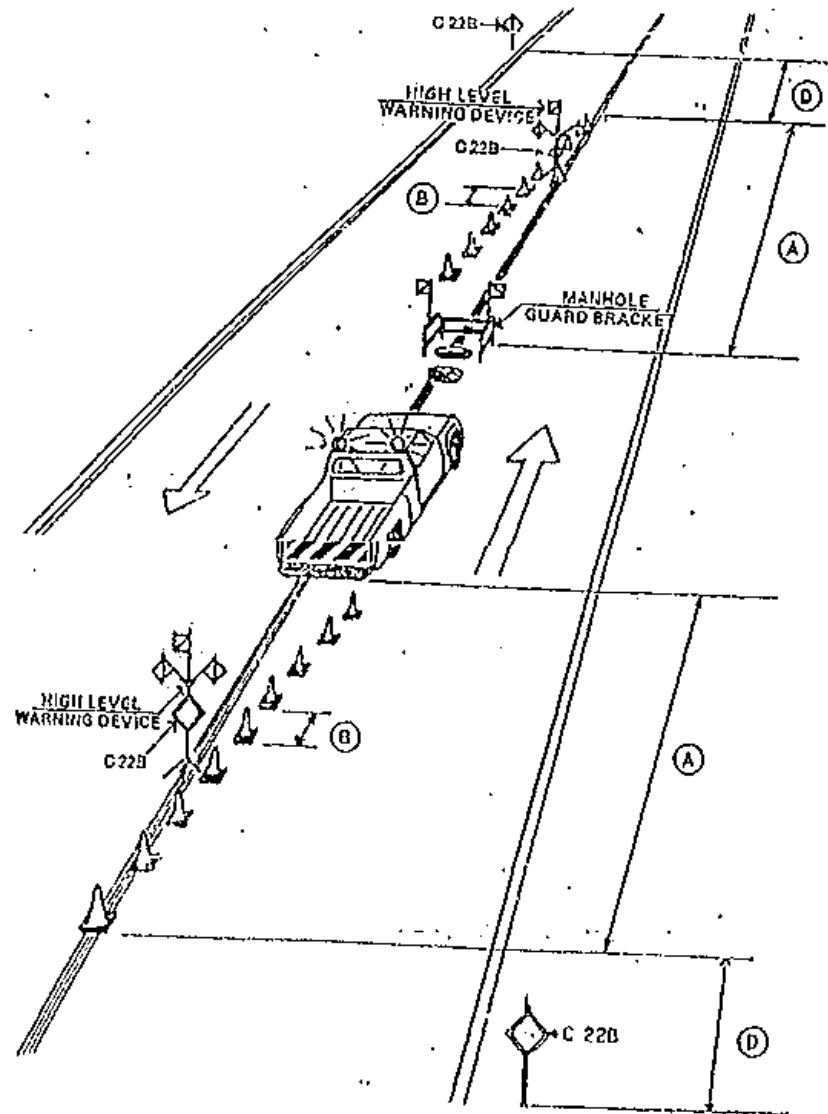
CITY AD

DATE

APPROVED
agb

REV NO

740E



NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

2. SEE STD. 741 FOR:

- (A) TAPER LENGTH
- (B) DELINEATOR SPACING-TRANSITIONS
- (D) SIGN SPACING



CITY OF PETALUMA

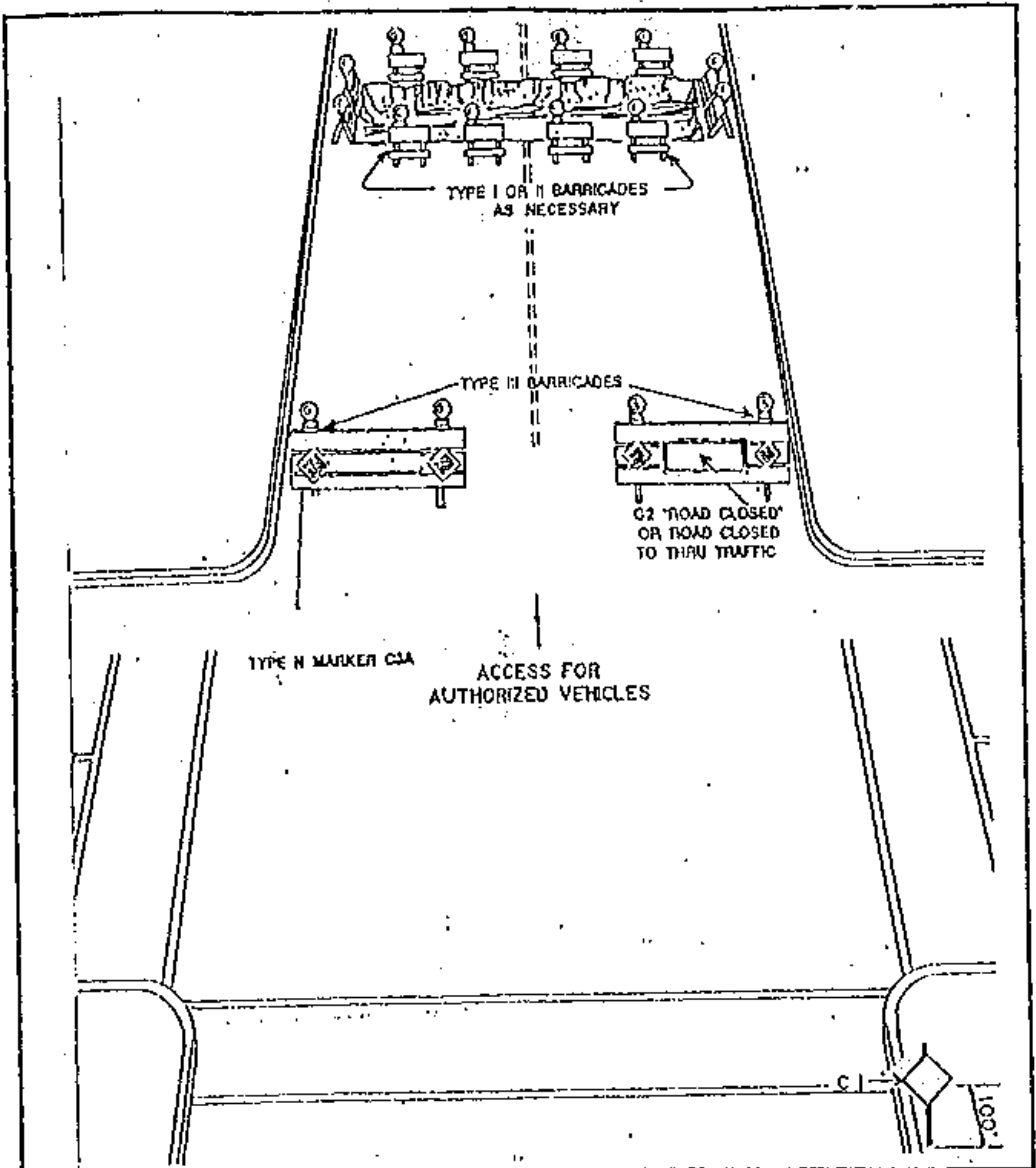
WORK AREA TRAFFIC CONTROL

MANHOLE ACCESS IN CENTER OF STREET

SCALE: NONE

DATE: JAN. 1991

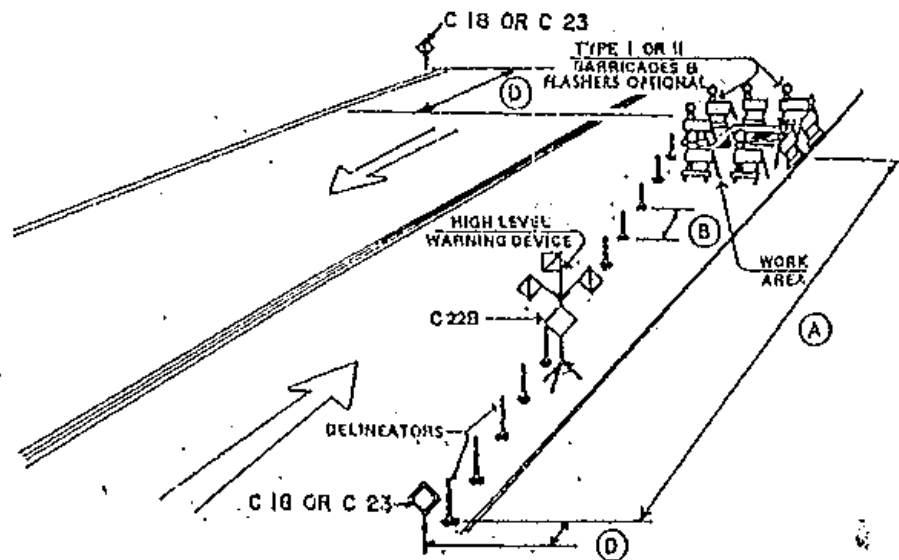
DATE	APPROVED	DWG. NO.
1/11	<i>ast</i>	740F



NOTES:
 1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

CITY OF PETALUMA		
WORK AREA TRAFFIC CONTROL		
LOCAL STREET CLOSURE		
SCALE: NONE	DATE: JAN. 1991	
CITY AD DATE: _____ BY: <i>Cef</i>	APPROVED DATE: _____ BY: _____	PROJ. NO. 740G





NOTES:

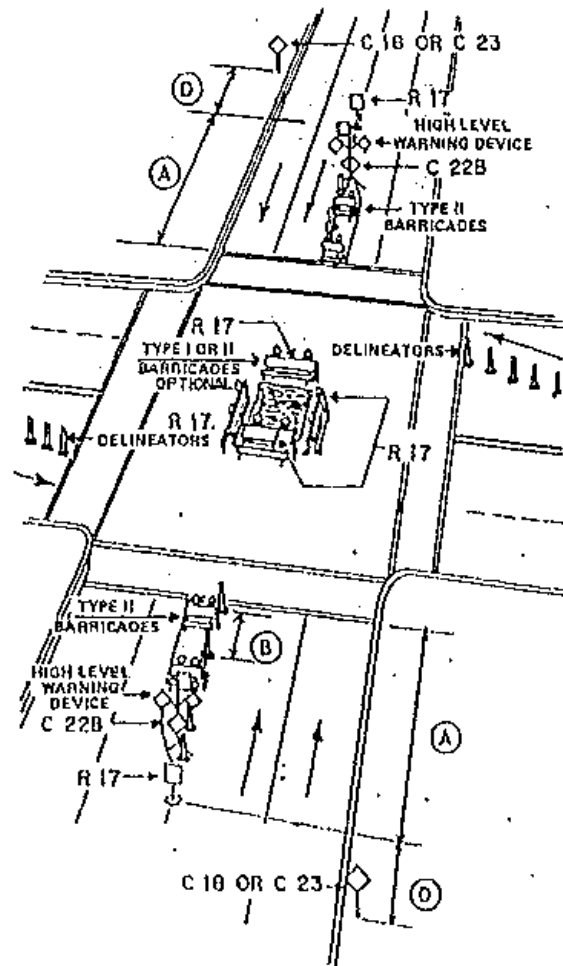
1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

2. SEE STD. 741 FOR:

- (A) TAPER LENGTH
- (B) DELINEATOR SPACING-TRANSITION
- (D) SIGN SPACING

CITY OF PETALUMA			
WORK AREA TRAFFIC CONTROL			
WORK AREA OF PARKING LANE OR SHOULDER			
SCALE: NONE		DATE: JAN. 1991	
DATE	APPROVED	DWG. NO.	
019	<i>[Signature]</i>	74011	

C BY AD



NOTES:

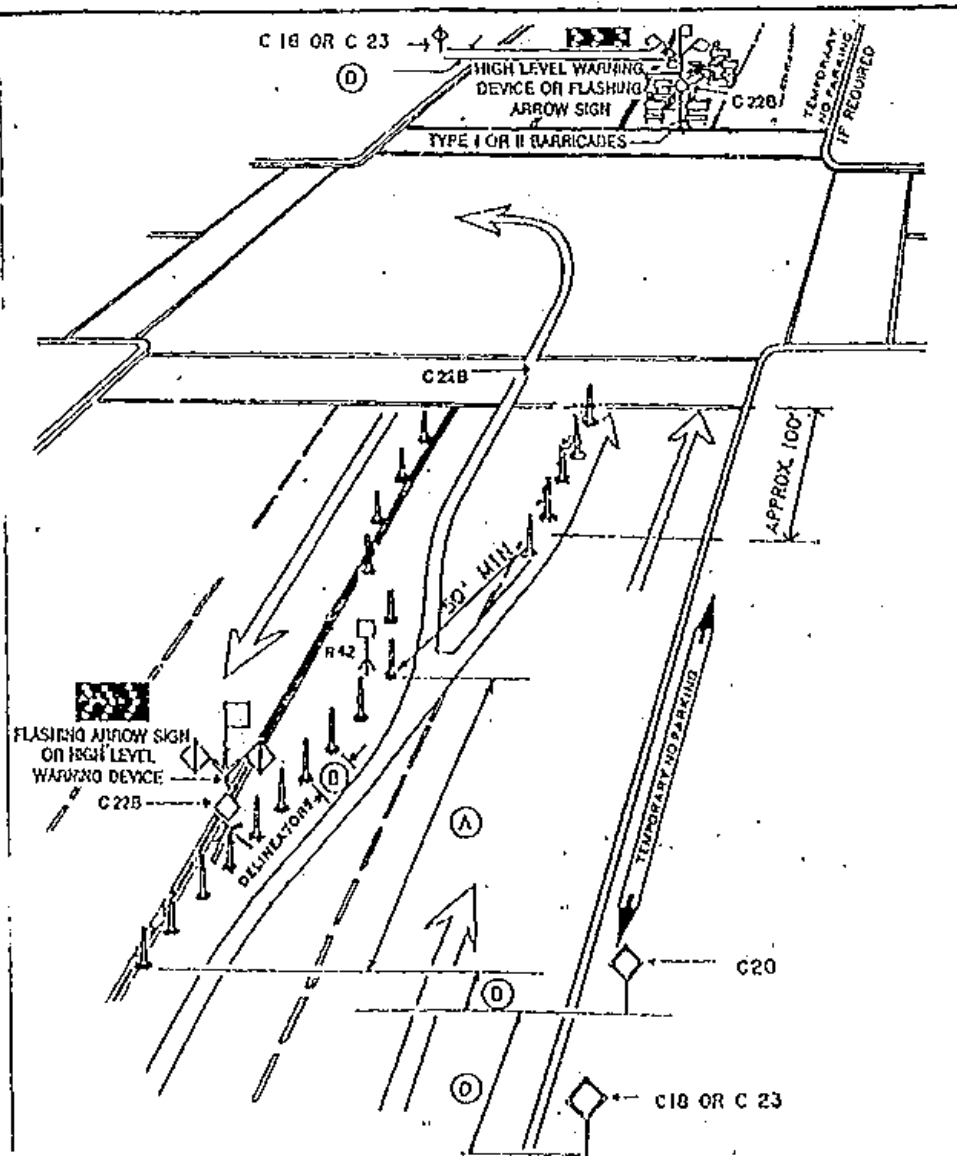
1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

2. SEE STD. 741 FOR:

- (A) TAPER LENGTH
- (B) DELINEATOR SPACING-TRANSITIONS
- (D) SIGN SPACING

(C) CITY AD

CITY OF PETALUMA		
WORK AREA TRAFFIC CONTROL		
WORK WITHIN INTERSECTION		
SCALE: NONE		DATE: JAN, 1991
OWN	APPROVAL	DWG NO.
CITY	<i>[Signature]</i>	7401



NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.

2. SEE STD. 741 FOR:

- (A) TAPER LENGTH
- (B) DELINATOR SPACING-TRANSITIONS
- (D) SIGN SPACING

(C) 117 AD

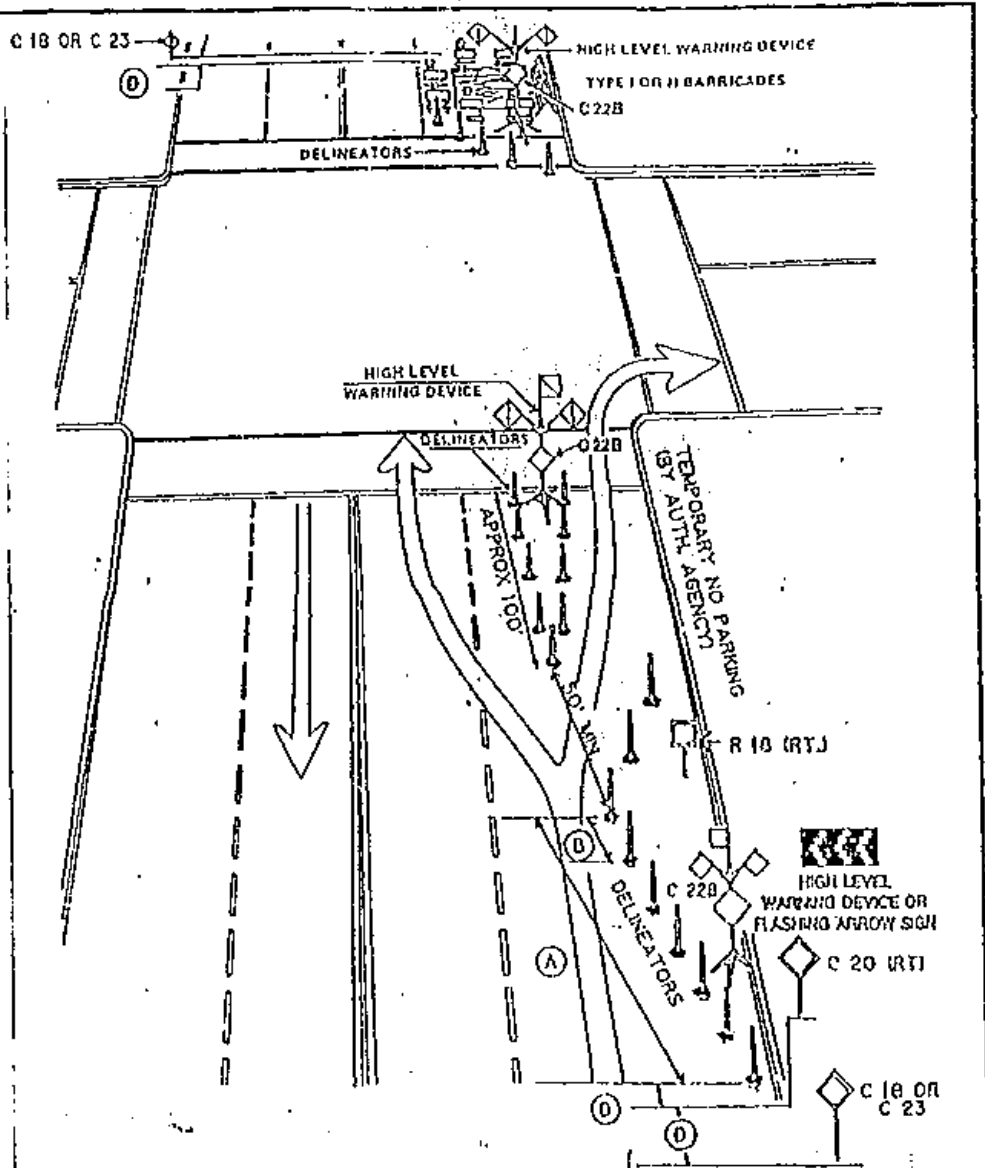
CITY OF PETALUMA

WORK AREA TRAFFIC CONTROL
 WORK BEYOND INTERSECTION
 LEFT LANE CLOSED

SCALE: NONE

DATE: JAN, 1991

DATE	1/21/91	REV. NO.	
BY	<i>CFE</i>	APP. NO.	740J

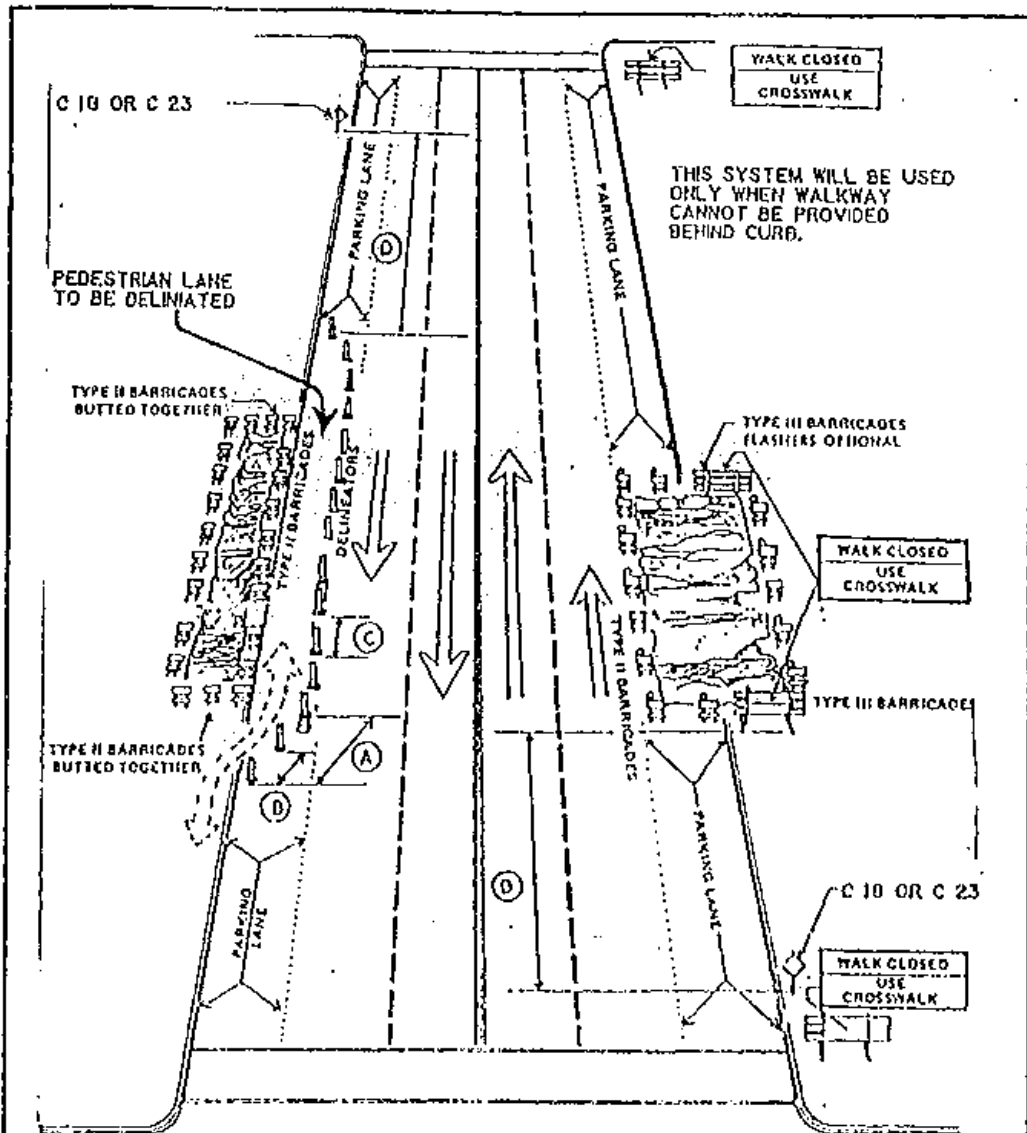


NOTES:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.
2. SEE STD. 741 FOR:
 - (A) TAPER LENGTH
 - (B) DELINEATOR SPACING-TRANSITIONS
 - (D) SIGN SPACING



CITY OF PETALUMA		
WORK AREA TRAFFIC CONTROL		
WORK BEYOND INTERSECTION RIGHT LANE CLOSED		
SCALE: NONE	DATE: JAN, 1991	
<small>DESIGNED BY</small> 	<small>CHECKED BY</small> 	<small>DRAWN BY</small> 740K



NOTES

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

2. SEE STD. 741 FOR:

- (A) TAPER LENGTH
- (B) DELIMITER SPACING-TRANSITIONS
- (C) DELIMITER SPACING-TANGENTS
- (D) SIGN SPACING



CITY OF PETALUMA

WORK AREA TRAFFIC CONTROL
PEDESTRIAN CONTROL

SCALE: NONE DATE: JAN. 1991

DATE	APPROVED	DATE
	<i>[Signature]</i>	740L

TRAFFIC SPEED	TAPER LENGTH	DELINEATOR SPACING		SIGN SPACING
	(A) (FEACH LANE)	(B) (TRANSITION)	(C) (TAPER)	(D) (ADVANCE OF TAPER AND BETWEEN SIGNS)
25 MPH	150 FT	25 FT	50 FT	150 FT
30 MPH	200 FT	30 FT	60 FT	200 FT
35 MPH	250 FT	35 FT	70 FT	250 FT
40 MPH	350 FT	40 FT	80 FT	350 FT
45 MPH	550 FT	45 FT	90 FT	550 FT
50 MPH	600 FT	50 FT	100 FT	600 FT
55 MPH	700 FT	50 FT	100 FT	700 FT

MINIMUM DELINEATOR AND SIGN SPACING

NOTE:

1. TRAFFIC CONTROL SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

CITY OF PITALUMA	
WORK AREA TRAFFIC CONTROL	
DELINEATOR JIG SIGN PLACEMENT	
SCALE: NONE	DATE: JUN. 1991
BY: <i>AD</i>	APPROVED: <i>AD</i>
	741

SECTION VI

**CONSTRUCTION
AGREEMENT**

CONSTRUCTION AGREEMENT
FOR

THIS AGREEMENT is made this _____ day of _____, 19____,
between the City of Petaluma, a California municipal corporation, hereinafter
called "Owner", and

whose _____ address _____ is
_____ herei
nafter called "Contractor".

WITNESSETH, that Contractor and Owner, for the consideration
hereinafter named, agree as follows:

1. Contractor shall furnish all of the materials and perform all of the work
required by Resolution No. _____ N.C.S., adopted by the City
Council of the City of Petaluma and in accordance with the plans and
project _____ contract _____ documents _____ prepared _____ by
_____ and approved _____ by
_____.
2. The work to be performed under this contract shall be commenced within
_____ days from the date of notice to proceed, and shall be
completed to the satisfaction of the Owner within
_____. In no event, however, shall the work
to be performed under this contract be considered to be complete until all
construction items called for on the drawings and specifications have been
completed, and the contract price paid in full.
3. Owner shall pay to Contractor for the performance of this contract at the
rate _____ of

Dollars, (\$ _____) based on the bid price of
the same. Notwithstanding any provision herein, Contractor shall not be

paid any compensation until such time as Contractor provides to the Finance Department of the City information requested on the "Vendor Information" form available from the City and has obtained a currently valid Petaluma business license pursuant to the Petaluma Municipal Code.

4. All requests for changes in drawings and specifications must be in writing and signed by Owner.
5. The drawings and specifications, including all general conditions and supplemental general conditions, Resolution No. _____ N.C.S., the Contractor's bid, the Notice to Bidders, the proposal and bid schedules, bidder's 100% Faithful Performance Bond in the amount of \$ _____, bidder's 50% Labor and Materials Bond in the amount of \$ _____, and Certificates of Insurance, as may be required by the Owner, and any provisions required by local, state and federal law to be inserted in this contract whether actually inserted or not, form the contract documents and are as fully a part of this contract as if hereto attached or herein repeated.
6. Contractor hereby covenants and agrees to, and shall, defend, indemnify and save harmless, the City of Petaluma, its agents and/or employees against all claims, demands, costs, and liabilities for damages of any kind or nature arising out of or occasioned by Contractor's performance of its obligations pursuant to this contract. However, this indemnity does not extend to any loss, damage or expense arising out of the sole negligence or willful misconduct of the City or the City's employees. The City Council may retain so much of the money due Contractor as shall be considered necessary, until disposition has been made of claims or suits for damages as aforesaid.
7. **Insurance.**
Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance.

Coverage shall be at least as broad as:

- (1) Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).
- (2) Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).
- (3) Workers' Compensation Insurance as required by the State of California and Employer's Liability Insurance.

B. Minimum Limits of Insurance.

Contractor shall maintain limits no less than:

- (1) General Liability: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate liability is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
- (2) Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
- (3) Employer's Liability: \$1,000,000 per accident for bodily injury or disease.

C. Deductibles and Self-Insured Retentions.

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees, and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

D. Other Insurance Provisions.

The general liability and automobile policies are to contain, or be endorsed to contain, the following provisions:

- (1) The City, its officers, officials, employees, agents and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the

Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees, agents or volunteers.

- (2) For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, agents or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
- (3) Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the City, its officers, officials, employees, agents or volunteers.
- (4) The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought except, with respect to the limits of the insurer's liability.
- (5) Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) days' prior to written notice by certified mail, return receipt requested, has been given to the City.

E. Acceptability of Insurers.

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

F. Verification of Coverage.

Contractor shall furnish the City with original endorsements effecting coverage required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be on forms provided by the City. All endorsements are to be received and approved by the City before work commences. As an alternative to the City's forms, the

Contractor's insurer may provide complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications.

G. Subcontractors.

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

8. Contractor hereby specifically agrees that no mechanics' liens or other claim or claims shall be filed or maintained by it against said buildings and improvements and real estate appurtenances heretofore or on account of any work or labor done or materials furnished under the contract or otherwise, for, toward, in or about the erection and construction of said buildings and improvements.
9. This contract shall bind, and the benefits inure to, the respective parties thereto, their legal representatives, executors, administrators, successors in office or interest, and assigns.
10. In the event that legal action is necessary to enforce any provision of this contract, the prevailing party shall be entitled to reasonable attorneys' fees and legal costs.
11. This contract constitutes the entire agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have executed this document the day, month and year first above written.

CITY OF PETALUMA

CONTRACTOR

City Manager

By _____
Name and Title

ATTEST:

Taxpayer's FID No.

City Clerk

Social Security No.

APPROVED AS TO FORM:

Petaluma Business License No.

City Attorney

COMPLETED AND APPROVED:

Department Head

APPROVED:

Risk Manager

APPROVED:

Finance Director

rev. 6/92 (fmk)

9793agra

LABOR AND MATERIALS BOND

WHEREAS, the City of Petaluma, State of California, and _____
_____ (hereinafter
designated as "Principal") have entered into an agreement whereby the Principal agrees to
install and complete certain designated public improvements, which said agreements, dated
_____, 19____, and identified as project _____
_____, is hereby referred to and
made a part hereof; and,

WHEREAS, under the terms of said agreement Principal is required before entering
upon the performance of the work, to file a good and sufficient payment bond with the City of
Petaluma, to secure the claims to which reference is made in Title 15 (commencing with
Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California.

NOW, THEREFORE, said Principal and the undersigned, duly authorized to transact
business under the laws of the State of California, as corporate surety, are held firmly bound
unto the City of Petaluma, and all contractors, subcontractors, laborers, materialmen and other
persons employed in the performance of the aforesaid agreement and referred to in the
aforesaid Civil Code of the State of California, in the sum of _____
_____ Dollars (\$_____)

for materials furnished or labor thereon of any kind, or for amounts due under the
Unemployment Insurance Act with respect to such work or labor, that said surety will pay the
same in an amount not exceeding the amount hereinabove set forth, and also in case suit is
brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable
expenses and fees, including reasonable attorney's fees, incurred by City in successfully
enforcing such obligation, to be awarded and fixed by the Court, and to be taxed as costs and
to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of
any and all persons, companies and corporations entitled to file claims under Title 15
(commencing with section 3082) of Part 4 of Division 3 of the Civil Code, so as to give a
right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become
null and void, otherwise it shall be and remain in full force and effect.

THE SURETY hereby stipulates and agrees that no change, extension of time,
alteration or addition to the terms of said agreement or the specifications accompanying the

same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration or addition.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and surety above name, on _____, 19____.

PRINCIPAL

SURETY

By _____

By _____

Name and Title

Name and Title

oo0oo

NOTE: Be sure that all bonds submitted have a certified copy of the bonding agent's power of attorney attached. Also be sure that Surety is an "Admitted Surety" (i.e., surety qualified to do business in California). Contact County Clerk or Department of Insurance to verify.

APPROVED AS TO AMOUNT:

APPROVED AS TO FORM:

City Manager

City Attorney

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rev. 8/92 (fuk)
rev. 3/93 (fuk)

FAITHFUL PERFORMANCE BOND

WHEREAS, the City Council of the City of Petaluma, State of California, and _____ (hereinafter designated as "Principal") have entered into an agreement whereby Principal agrees to install and complete certain designated public improvements, which said agreement, dated _____, 19____, and identified as project _____, is hereby referred to and made a part hereof; and,

WHEREAS, said Principal is required under the terms of said agreement to furnish a bond for the faithful performance of said agreement.

NOW, THEREFORE, WE, the Principal and _____, duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the City of Petaluma, hereinafter called "City", in the penal sum of _____ Dollars (\$ _____) lawful money of the United States, for payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors, and administrators, jointly and severally, firmly by these presents. The conditions of this obligation is such that if the above-bounded Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the said agreement and any alteration thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City of Petaluma, its officers, agents, and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of this obligation secured hereby and in addition to the face amount specified therefor, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and including in any judgment rendered.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of this agreement or to the work to be performed thereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond, and

It does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the agreement or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on _____, 19__.

PRINCIPAL

SURETY

By _____ By _____

Name and Title _____ Name and Title _____

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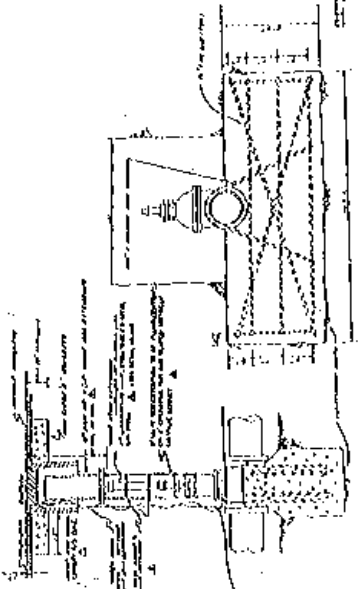
NOTE: Be sure that all bonds submitted have a certified copy of the bonding agent's power of attorney attached. Also be sure that Surety is an "Admitted Surety" (i.e., surety qualified to do business in California). Contact County Clerk or Department of Insurance to verify.

APPROVED AS TO AMOUNT:

APPROVED AS TO FORM:

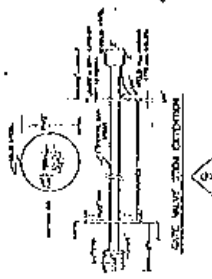
City Manager City Attorney

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rev. 3/92 (fmk)
rev. 3/93 (fmk)

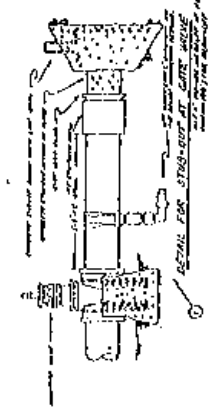


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NEW WINDOW DETAIL

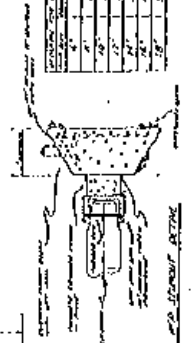


SEE WALL FOR DETAIL



DETAIL FOR STAIR-ROOF AT LEVEL

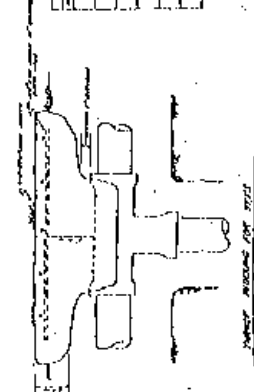
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FOR WINDOW DETAIL



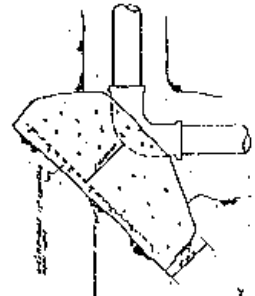
C.I.P. STAIR ROOF DETAIL



WINDOW ROOFING DETAIL



WINDOW ROOFING DETAIL



WINDOW ROOFING DETAIL

CONDOS - THROUGH GLASS ASSEMBLY

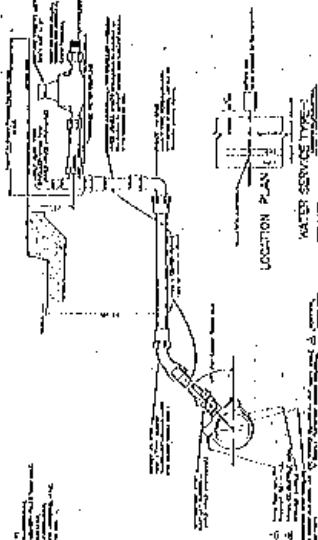
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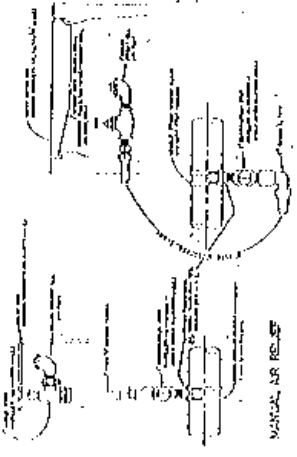


AUTOMATIC AIR & VACUUM RELIEF VALVE INSTALLATION



LOCATION PLAN WATER SERVICE LINES

ACP PVC OR DUCTILE IRON MAIN



MANUAL AIR RELIEF

BLOW OFF - BLOWDOWN VIEW

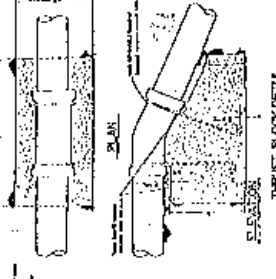


DETAIL OF THRUST BLOCKS AT HYDRANT



PLAN

WATER SERVICE LINE TO HOUSE



THRUST BLOCK WITH UPWARD THRUST

THRUST BLOCK SPECIFICATIONS

A	MINIMUM 18" DIA.
B	MINIMUM 18" DIA.
C	MINIMUM 18" DIA.
D	MINIMUM 18" DIA.

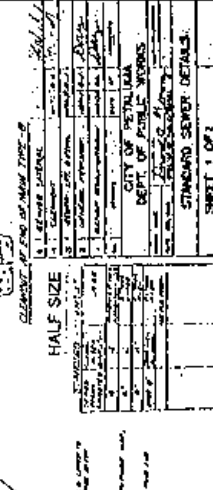
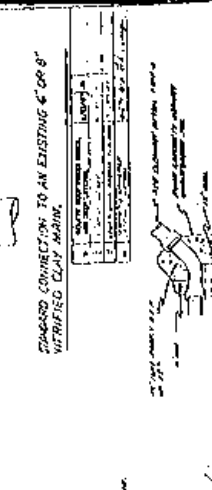
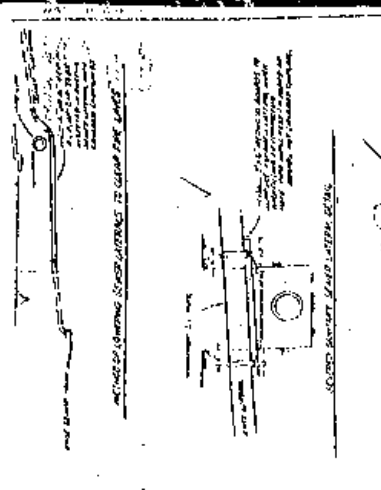
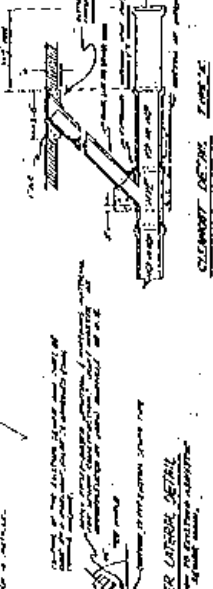
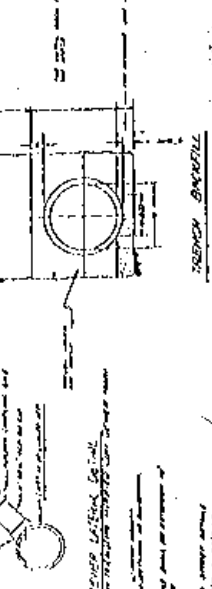
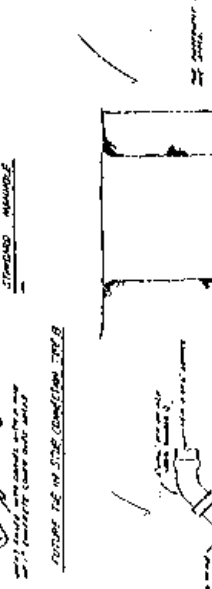
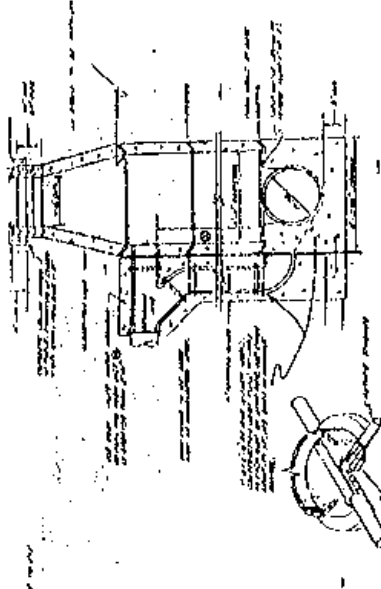
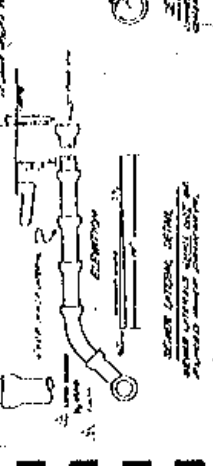
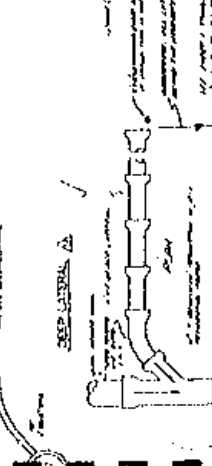
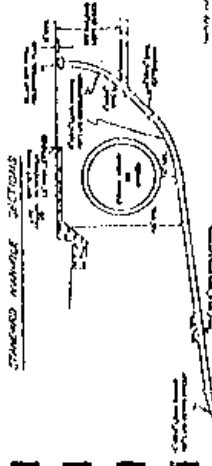
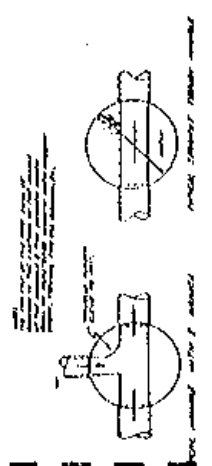
TRANSFER SERVICE DETAIL

NO.	DATE	BY	REVISION
1	10/1/57	J.W.	AS SHOWN
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50	10/1/57	J.W.	REVISION

CITY OF PEELISA
ENGINEERING DEPARTMENT
1000 WEST 10TH AVENUE
DENVER, COLORADO

DRY STATION LOCATION - WEST END

SHEET 2 OF 2



STANDARD CONNECTION TO AN EXISTING 6" OR 8" WRAPPED CLAY MANHOLE.

HALF SIZE

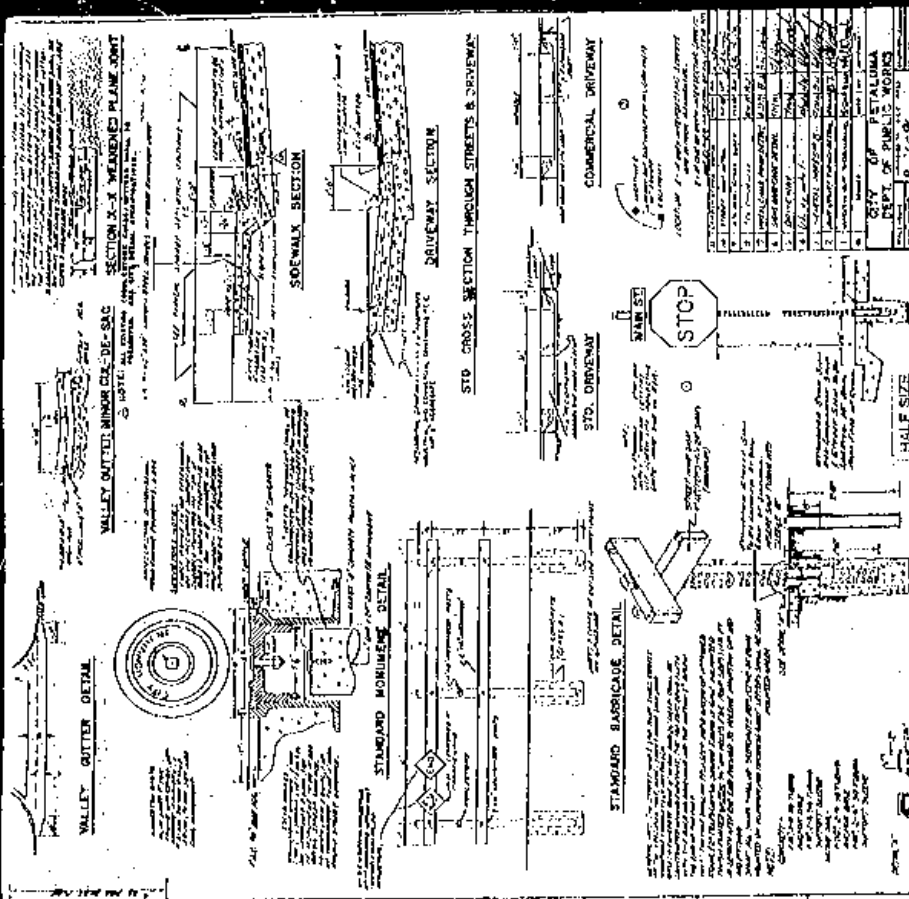
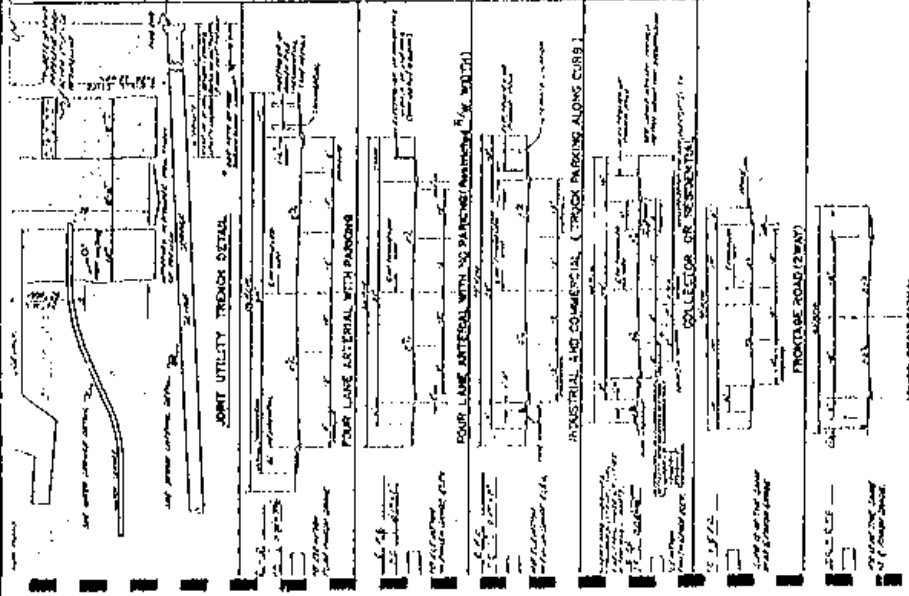
SEWER LATERAL DETAIL
SHOWS USUALLY BEING ONLY
PLACED UNDER STRUCTURE

SEWER LATERAL DETAIL
SHOWS USUALLY BEING ONLY
PLACED UNDER STRUCTURE

CLEANOUT DETAIL TYPE 3

1. LEGEND SYMBOLS	2. NOTES
3. MATERIALS	4. DIMENSIONS
5. FINISHES	6. SCHEDULES
7. TOLERANCES	8. REFERENCES
9. CONTRACT DOCUMENTS	10. REVISIONS
11. CITY OF DETROIT	12. DEPT. OF PUBLIC WORKS
13. PROJECT NO.	14. SHEET NO.
15. STANDARD SEWER DETAILS	16. SHEET 1 OF 1

STANDARD SEWER DETAILS
SHEET 1 OF 1
JOB NO. 10000



1	STANDARD SIGN DETAIL	1/2" = 1'-0"
2	STOP & STREET SIGN DETAIL	1/2" = 1'-0"
3	STANDARD BARRICADE DETAIL	1/2" = 1'-0"
4	STANDARD SIGN DETAIL (HALF SIZE)	1/2" = 1'-0"
5	VALLEY OUTER DETAIL	1/2" = 1'-0"
6	VALLEY OUTER MINI CIRCLE DE-SIG	1/2" = 1'-0"
7	SOFTWALK SECTION	1/2" = 1'-0"
8	DRIVEWAY SECTION	1/2" = 1'-0"
9	STD. DRIVEWAY	1/2" = 1'-0"
10	COMMERCIAL DRIVEWAY	1/2" = 1'-0"
11	STD. DRIVEWAY THROUGH STREETS & DRIVEWAY	1/2" = 1'-0"
12	STOP SIGN DETAIL	1/2" = 1'-0"
13	STOP & STREET SIGN DETAIL	1/2" = 1'-0"
14	STANDARD SIGN DETAIL (HALF SIZE)	1/2" = 1'-0"
15	JOINT UTILITY TRENCH DETAIL	1/2" = 1'-0"
16	FOUR LANE ARTERIAL WITH PARKINGS	1/2" = 1'-0"
17	FOUR LANE ARTERIAL WITH NO PARKINGS (MARKING WITH)	1/2" = 1'-0"
18	INDUSTRIAL AND COMMERCIAL (TRUCK PARKING ALONG CURB)	1/2" = 1'-0"
19	FRONTAGE ROAD (2 WAY)	1/2" = 1'-0"

CITY OF PETALUMA
DEPT. OF PUBLIC WORKS
STANDARD STREET DETAILS
SHEET 1 OF 2
24 SEP 1960

North Bay Construction, Inc.

"NORTH BAY'S S.W.P.P.P. POLICY"

WHAT IS S.W.P.P.P.?

S.W.P.P.P. is an abbreviation for Storm Water Pollution Prevention Program.

WHO REGULATES THIS LAW?

This program is regulated by the California Environmental Protection Agency/
State Water Resource Control Board.

WHAT IS THE PURPOSE OF THIS LAW?

The intent is to prevent industrial sites (our yard) and construction sites from becoming a major source of pollution.

WHAT DOES THE WATER RESOURCE BOARD CONSIDER A VIOLATION?

Because this law is so new there are controversies on the implementation of the law.

Primarily a violation would be any owner who displays blatant disregard for the environment.

Basically, contractors should make a concerted effort to legally clean up their yards, and prohibit any dumping of any kind of material or substance that could possibly find its way into the storm water run off.

The general consensus of the Regional Water Board is that some pollutants are apt to be prevalent in contractor yard storm water run offs, however, their priority lies in the areas where MASSIVE RUN OFF POLLUTANTS EXIST or could exist, i.e. wrecking yards, feed lots, etc.

HOW DOES NORTH BAY PROCEED WITH THE IMPLEMENTATION OF THIS LAW?

We must control all Storm Water Discharge such as, the prevention of highly contaminated oil, grease, acids, anti-freeze, heavy metals, etc. run off.

Simply, all industrial sites (such as our yard) must IMPLEMENT GOOD, SAFE AND LEGAL HOUSEKEEPING TECHNIQUES.

North Bay Construction is required to develop a written program and then implement and train all personnel on our best management practices to protect our yard and environment.



North Bay Construction, Inc.

Page 2.
S.R.P.P.P. Policy

WHAT IS NORTH BAY'S BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING PROCEDURES?

- * Diligence in training each and every employee on the proper procedures for protecting contaminants from polluting our yard and environment.
- * Continually keep our yard and shop in a clean and organized manner. Good housekeeping techniques is a priority at all times.
- * Purchase only the items necessary to complete a job, eliminate storage of frequently used products that are deemed hazardous or are capable of being a pollutant when spilled.
- * Utilize containment facilities for those products that are liquid.
- * Clean up any spill properly and immediately.
- * Dispose of any "clean up by product" properly.
- * Monitor and use manifests for the transportation of any wastes. Make sure those hauling for you are properly licensed. Insist that the proposed final destination point is properly permitted to receive such waste, and that you receive proper verification from the disposal site that your waste has actually been received.
- * Always use the designated area to clean all vehicles and equipment i.e. wash racks.

Do not clean your equipment in such a manner that the "washed off" material can enter the storm water run off.
- * Recycle whenever possible. Be sure that those who do the recycling for you adhere to all applicable laws governing hazardous waste handling.
- * Make sure that only storm water run off enters our storm water collection system. NOTHING ELSE IS PERMITTED.

Grease interceptors can be an effective means of cleaning your storm water run off. Even though water and oil mixed is a hazardous material, once the water is migrated through a grease interceptor, it may no longer be a hazardous product provided there are no other products or hazardous substances mixed in with the water.

- * Keep waste streams pure at all times.



North Bay Construction, Inc.

Page 3.

S.W.P.P.P. Policy

WHO AT NORTH BAY IS IN CHARGE OF IMPLEMENTING THIS PROGRAM?

Jerry Cossey	-	Supervisor
Ron Svinth	-	Shop Foreman
Lisa Tiedeman	-	Safety Coordinator

HOW IS THIS POLICY IMPLEMENTED?

- * By strict training of each employee.
- * Through the publication of tool box topics, newspaper articles, bulletin board postings and safety meeting discussions.
- * By constant monitoring both in the shop and the yard of all daily activities.
- * By keeping accurate records of recycling, disposal of substances, etc.
- * By taking pictures of all changes occurring in the shop and yard on a quarterly basis and/or when a change has occurred.
- * At all times all equipment and vehicles are to be washed and steamed in the designated area (i.e. steam racks only.)
- * All bulk lubricants are to be kept at all times in the contained area.
- * If a spill occurs there is a "clean up by products" available throughout the shop, yard and contained area, labeled "Grease Sweep."
- * If a spill occurs in the fuel pump area there is an "oil spill response kit" available at the pumps. This kit includes pads, socks and clean up bags for the saturation of the particular chemical.
- * Any spill should be acted upon immediately and a supervisor be consulted.
- * Sorbents Pads are available throughout the shop, yard, fuel trucks and contained areas.



North Bay Construction, Inc.

August 31, 1995

PROJECT: Petaluma Marsh Enhancement Project - Phase 1
NBC Job NO. 829

STORM WATER PROTECTION PROGRAM PLAN

1.0 Potential sources of pollutants in Storm Water Discharges

Potential sources of pollutants in storm water discharges from the Petaluma Marsh Enhancement Project related primarily to stockpiling of materials on the site and grading activities.

2.0 Construction Storm Water Management Controls

Construction storm water management controls are essentially good housekeeping practices that will be used at the Petaluma Marsh Enhancement Project for minimizing the contact of storm water with pollutants. The following measures will be implemented at the Petaluma Marsh Enhancement Project:

2.0.1. Practices to minimize contact of Construction Materials, Equipment and Vehicles with Storm Water.

All construction raw materials (including dry materials, pesticides, herbicides and petroleum products) will be stored in designated areas as per plan and located away from Adobe Creek. Also, North Bay Construction, Inc. Employees have been trained in proper materials handling practices.

2.0.2. Equipment Storage, Cleaning and Maintenance

Equipment storage sites will be located in areas designated by the Owner's Representative. All heavy equipment and vehicles will be well maintained and inspected daily for leaks. Vehicles prone to leakage, such as pavers, will be parked over absorbent materials or drip pans. Vehicle fueling will be conducted at a site designated by the Owner.



2.0.3. On-site Storage and Disposal of Construction Materials

Concrete: Whenever possible, concrete trucks will be washed out offsite. When washout occurs onsite, wash water will be contained in a temporary pit where waste concrete can harden for later removal. Washing of fresh concrete will be avoided, unless runoff may be drained to a bermed or level area away from waterways and storm drain inlets.

2.1 Erosion and Sedimentation Controls

No grading activities will take place during periods of heavy rain and erosion and sedimentation controls will be used to prevent sediment from entering site runoff in significant quantities.

The following section describes the erosion and sedimentation control that will be used at the Petaluma Marsh Enhancement - Phase I Project. All controls described herein are shown on the Lakeville Highway Mitigation Planting and Grading Plan (Sheets M2 through M5) and the City of Petaluma Landfill Closure Grading and Drainage Plan (Sheet L4) for the Project.

2.1.1. Soil Stabilization Controls

Soil stabilization controls shall be implemented on all disturbed areas not within the in-channel terrace to be planted.

Hydroseeding/Seeding: Disturbed areas shall be hydro-mulched, hand seeded or seeded with a mechanical seeder and protected by straw. The seed mix and application rate shall be as specified on the Project Plans and Specifications.

Watering for Dust Control: Heavily travelled dirt roads will be sprinkled daily by a water truck for dust suppression. Care will be taken to sprinkle areas of exposed soils during windy periods. Only the minimum amount of water will be used; no runoff will result from this practice.

2.1.2. Erosion and Sediment Controls

Erosion and Sediment control measures may include temporary earth berms and sand bags, hay bales and silt fences as directed by the Engineer and comply with the procedures outlined in the U.S. Environmental Protection Agency Manual entitled: "Guidelines for Erosion and Sedimentation Control Planning and Implementation."

Silt Fences: Silt fences will be installed as shown on the Petaluma Marsh Enhancement Project - Erosion Control plans and as directed by the Engineer.

Hay Bales: Hay bales will be installed as shown on the Petaluma Marsh Enhancement Project Erosion Control plans and as directed by the Engineer.

PERMIT RECORD		STREET ADDRESS:				COUNTY ASSESSOR'S PARCEL NUMBER
LOT	SUBDIV.		ZONING DIST.	FIRE ZONE	OCCUP.	OTHER
TYPE OF PERMIT	PERMIT NO.	PLAN NO.	DATE ISSUED	OTHER	REMARKS	
	20080385		4/24/2008			Royal Yellow
					STRUCTURAL PERMIT	
					ALSO	

PERMIT DESIGNATION: B - BUILDING E - ELECTRICAL U - USE PERMIT HM - HOUSE MOVING
 P - PLUMBING V - VARIANCE
 T - TRAILER H - HEATING



CITY OF PETALUMA
COMMUNITY DEVELOPMENT DEPARTMENT
 11 ENGLISH STREET, PETALUMA, CA 94952
 (707) 778-4302 Fax (707) 778-4498

Permit to Perform Work

Permit Number: 20080389

Inspection Request: (707) 778-4479

LICENSED CONTRACTORS DECLARATION
 I hereby affirm under penalty of perjury that I am licensed under the provisions of Chapter 9 (commencing with Section 7300) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License No. _____ Class _____ Exp. Date _____
WORKERS COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:
 I have and will maintain a certificate of consent to self-insure for workers compensation as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

I have and will maintain workers compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers compensation insurance carrier, policy number and expiration date are:

Carrier: _____ Policy No. _____ Exp. Date _____

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers compensation laws of California, and agree that if I should become subject to the workers compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with these provisions or this permit shall be deemed revoked.

WARNING: FAILURE TO SECURE WORKERS COMPENSATION COVERAGE IS UNLAWFUL, AN SHALL SUBJECT AND EMPLOYER TO CRIMINAL PENALTIES AND CIVIL CRIMES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3700 OF THE LABOR CODE, INTEREST, AND ATTORNEY S FEES.

OWNER-BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Business and Professions Code, Chapter 9, Division 3, for the following reasons:

I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale.

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project.

I certify that I have read this application and state that the information given is true and correct. I agree to comply with all City ordinances and State laws relating to building construction and hereby authorize representatives of the City to enter upon the aforementioned property for inspection purposes at any time, and I make this statement under penalty of law.

HAZARDOUS MATERIALS

Hazardous Materials: Indicate if the intended occupancy will use chemicals. Initialing Yes acknowledges that Health & Safety Code Sections 25505, 25533 & 25534 as well as filing directions were made available to you. YES _____ NO _____

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Section 3097, Civil Code)

Lenders Name: _____
 Lenders Address: _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all City and County ordinances and State laws relating to building construction, and I hereby authorize representatives of this agency to enter upon the above-mentioned property for inspection purposes. I further agree to save, indemnify and hold harmless the City of Petaluma against liabilities, judgments, costs and expenses, which may in any way accrue against the City in consequence of the granting of this permit and will pay all expenses including attorney's fees in connection therewith. All work performed by virtue of this permit must conform to plans and specifications filed by the owner or his/her authorized agent with the City. This permit does not constitute approval of any violation of the above-recited provisions, nor of any State or City ordinance.

Signature: _____ Date: _____

THIS PERMIT SHALL EXPIRE BY LIMITATION IF AUTHORIZED WORK IS NOT COMMENCED WITHIN 180 DAYS OF ISSUANCE OR IS ABANDONED FOR 180 DAYS OR MORE (PER CALIFORNIA BUILDING CODE AND PETALUMA MUNICIPAL CODE).

Date Applied: 04/21/2008
Date Issued: May 16 2008 12:00AM

Permit Type: Building/Building/
 Demolition/NA

Job Address: 0 CASA GRANDE RD
 PETALUMA CA

Parcel No.: 005060041, 005060042

Owner: LANDS OF BAYWOOD LLC
 414 AVIATION BLVD
 SANTA ROSA, CA 95407
 578-5344

Applicant: DAVIS, DANIEL O INC
 1051 TODD RD
 SANTA ROSA, CA 95407
 585-1903

DAVIS, DANIEL O INC
 1051 TODD RD
CONTRACTOR: SANTA ROSA, CA 95407
 585-1903
 431984

Valuation: \$ 100,000.00
(Contractor)

Fee Information:

Fee Items	# of Each	Amount
Demolition Permit (enter 1)	1.00	\$1,446.57
Incremental Records Fee (enter 1)	1.00	\$610.00
Microfilm - 8.5x11 (each)	1.00	\$2.50
Microfilm - Lg. Plans / Blue Prints (each)	2.00	\$8.50
FirePlanCheckFee - Grading (Soil Remediation) (enter 1)	1.00	\$475.00
Demo Plan Check Fee (enter 1)	1.00	\$1,446.57
Total		\$3,989.14

Payment Information:

Date	Receipt No.	Amount
04/21/2008 15:54:22		\$1,446.57
05/16/2008 11:25:11	17829	\$2,542.57
Total		\$3,989.14

Description of Work:
 "ROYAL TALLOW" SITE - AKA 2044 LAKEVILLE & 2596 CASA GRANDE RD. DEMOLISH & REMOVE COMMERCIAL FACILITY BUILDINGS AND ASSOCIATED BUILDINGS DOWN TO CLEAN DIRT. CLEAR PROPERTY OF ANY DEBRIS.

CITY OF PETALUMA
PLANNING/BUILDING
MAY 16 2008

PAID

0 Casa Grande Rd

FILE COPY

131) SPECIAL INSPECTION REQUIRED YES NO IF YES, SEE ADDITIONAL SHEET

INSPECTION RECORD	DATE	NAME	REMARKS
103) FOUNDATION			
FORMS/SETBACK			
FOOTING			
WALLS			
106) UFER GROUND #			
104) CAISSONS/PIERS			
105) SLAB REINFORCING			
107) UNDERGROUND UTILITIES			
<input type="checkbox"/> SEWER <input type="checkbox"/> WATER <input type="checkbox"/> FIRE			
110) MASONRY			
109) RETAINING WALLS			
120) UNDERSLAB			
<input type="checkbox"/> PLUMBING <input type="checkbox"/> ELECTRICAL			
115) HYDRONICS			
116) U/F ELECTRICAL			
117) U/F MECHANICAL			
118) U/F PLUMBING			
119) U/F FRAMING			
139) U/F INSULATION			
126) SHEAR WALLS			
<input type="checkbox"/> INTERIOR <input type="checkbox"/> EXTERIOR			
127) DIAPHRAGMS			
<input type="checkbox"/> ROOF <input type="checkbox"/> FLOOR			
137) Roofing Progress			
134) SIDING/SHEATHING			
125) HOLD DOWNS			
132) CLOSE-IN			
122) ROUGH ELECTRICAL			
123) ROUGH MECHANICAL			
124) ROUGH PLUMBING			
128) ROUGH FRAME			
759) FIRE SPRINKLER/CLOSE-IN/HYDRO			
139) INSULATION			
<input type="checkbox"/> WALLS <input type="checkbox"/> CEILING			
142) WALLBOARD			
143) FIREWALLS			
135) STUCCO/PLASTER			
<input type="checkbox"/> LATH <input type="checkbox"/> SCRATCH			
130) TUB/SHOWER PAN			EXTERIOR WILDFIRE CONSTRUCTION
			DEFENSIBLE SPACE-(FIRE TO VERIFY)
			CLASS A ROOF
164) SUSPENDED CEILING			<ul style="list-style-type: none"> • VALLEY INTERWOVEN COMP SHINGLE (IF APPLICABLE) • METAL FLASHING OVER #72 ASTM CAP SHEET (IF APPLICABLE)
<input type="checkbox"/> ROUGH ELEC. <input type="checkbox"/> ROUGH MECH.			
171) TEMPORARY ELECTRICAL			ROOF GUTTER PROVIDED WITH MEANS TO PREVENT ACCUMULATION
172) TEMPORARY GAS			EAVE AND CORNICE VENTS NOT PERMITTED UNLESS PROVIDED WITH FLAME INTRUSION ASSEMBLY
174) ELECTRIC METER AUTHORIZATION			NON-COMBUSTIBLE EXTERIOR
175) GAS METER AUTHORIZATION			DOUBLE PANE WINDOWS W/ONE TEMPERED PANE
153) GAS PRESSURE TEST			NON-COMBUSTIBLE OR SOLID CORE EXTERIOR DOOR(S)
<input type="checkbox"/> HOUSE <input type="checkbox"/> YARD			FIRE INSPECTION REQUIRED
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			FOR FIRE INSPECTION CALL 778-4399
194) PRE-GUNITE/POOL PIPING			772) FUEL TANK/DISPENSOR
195) PRE-DECK			776) FIRE HYDRANTS/UNDERGROUND
196) PRE-PLASTER/FENCE			770) FIRE SPRINKLER FINAL
197) PREFAB/POOL EXCAVATION/PIPING			779) ALARM SYSTEM
ANTI-ENTRAPMENT COVER			780) HOOD & DUCT SYSTEM
<input type="checkbox"/> VERIFIED <input type="checkbox"/> N/A			
			CLEARANCES/CERTIFICATE OF OCCUPANCY:
			FIRE
			HEALTH DEPARTMENT
			PLANNING
			PUBLIC WORKS
			WATER
			ROLLED PLANS <input type="checkbox"/> YES <input type="checkbox"/> NO
102) SIGN FINAL			
176) ELECTRICAL FINAL			
177) MECHANICAL FINAL			
178) PLUMBING FINAL			
199) BUILDING FINAL			
OCCUPANCY (OK TO OCCUPY)	09/12/30/09		



CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

October 28, 2009

Pamela Torliatt
Mayor

Teresa Barrett
David Glass
Mike Harris
Mike Healy
David Rabbitt
Tiffany Renée
Councilmembers

Lands of Baywood LLC or Current Owner
414 Aviation Blvd.
Santa Rosa, CA 95407

RE: Address: 0 Casa Grande Road Permit #: 20080389

Dear Sir or Madam,

Our records indicate that an outstanding building permit exists for your property. A review of the permit file verified that the work has not been inspected for over 180 days and per the 2007 California Building Code Sections 106.4.4 and 107.4, the permit has expired. We are giving you this last opportunity to final the following permit(s):

Project: Royal Tallow site – demolition of entire site
Date Issued: 5/16/08
Last Inspected: never

We would like to validate the work performed under the above permit(s). If no work has been performed, and you wish to keep the permit active, please respond in writing to request a one-time 180 day extension on the above permit(s). Please call (707) 778-4479 to schedule an inspection, or provide your records to us showing that inspections have been performed and the permit has been finalized. You may do this by:

- 1) Mailing a copy of the permit to the Building Division,
- 2) Faxing a copy of the permit to the Building Division at (707) 778-4498,
- 3) Bringing a copy of the permit to the Building Division office at City Hall.

This letter is formal notification that if we do not hear from you within **10 working days** from the date of this letter, the permit will be expired and become null and void. Our records will indicate that the work was done without a finalized permit, and that no further permits of any kind will be issued until this matter is resolved. Notification of this action will be recorded in our permit tracking system, and is public record. Please contact our office with any questions you may have, as we would like to assist you in this process. When calling this office, please make reference to this letter.

Sincerely,

Edward John Hamer
Chief Building Official
City of Petaluma



Community Development
Department
11 English Street
Petaluma, CA 94952
E-Mail
cdd@ci.petaluma.ca.us

Building
Phone (707) 778-4301
Fax (707) 778-4498
To Schedule Inspections:
Phone (707) 778-4479

Planning
Phone (707) 778-4301
Fax (707) 778-4498



CITY OF PETALUMA

11 English Street
Petaluma, CA 94952

Office: (707) 778-4302 Fax: (707) 778-4498

*LM
5/14/09*

CONTRACTOR ONLY PERMIT WORKSHEET

Permit # 20080389

BUILDING ADDRESS <u>2044 Lakeville Hwy</u> <i>of Case Grande Rd</i>		SUBDIVISION/LOT #		PARCEL # 005-060-075
OWNER NAME Lands of Baywood, LLC			(H) PHONE	(W) PHONE 707/578-5344
OWNER MAIL ADDRESS 414 Aviation Blvd.	CITY Santa Rosa	STATE Ca	ZIP 95403	
ARCHITECT/DESIGNER	LICENSE NO.	PHONE		
MAIL ADDRESS	CITY	STATE	ZIP	
ENGINEER	LICENSE NO.	PHONE		
MAIL ADDRESS	CITY	STATE	ZIP	
CONTRACTOR Daniel O. Davis Inc.	LICENSE NO. 431984	PHONE 707/585-1903		
MAIL ADDRESS 1051 Todd Rd	CITY Santa Rosa	STATE Ca	ZIP 95407	

Fund 001-400-0000

- BUILDING
- MECHANICAL
- GRADING
- BUILDING SURVEY
- DEMOLITION
- RE-ROOF
- ELECTRICAL
- PLUMBING
- SIGN
- MOVE BUILDING
- POOL
- FENCE

BUILDING	3321	1446.57
PLAN CHK	3322	1446.57
FIRE PLN CK	3371	475.00
INCREMENTAL	3323	610.00
CSIF/CSIFO	3324	

- NEW
- ALTERATION
- ACCESSORY BLD.
- ASF
- DUPLEX
- CONDO
- ADDITION
- REPAIR
- RESIDENTIAL
- DSF
- APARTMENT
- COMMERCIAL

ENERGY	3325	
ELECTRICAL	3326	
MECHANICAL	3327	
PLUMBING	3327	
MICROFILM	3312	12.00
MINEN/MINER	3329	

\$ 3,989.14
(1,446.57)

FLOOR AREA (Sq. ft.) <i>40,940</i>	REMODEL FLOOR AREA (Sq. ft.)	VALUATION <i>\$ 100,000</i>	<i>\$ 2,542.57</i>
GARAGE AREA (Sq. ft.)	REMODEL GARAGE AREA (Sq. ft.)	MAX OCC	STORIES
DECK AREA (Sq. ft.)	REMODEL DECK AREA (Sq. ft.)	GROUP	TYPE
BEDROOMS		CBC 2001	NEC 1999

PROPOSED WORK: *Demolish and remove commercial facility.
Buildings and associated buildings to clean dirt.
Clear property of misc. debris.*

(OVER)

CONSTRUCTION LENDING AGENCY. I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued. (Sec. 3097, Civ. C)

LENDER NAME N/A
MAILING ADDRESS CITY STATE ZIP

I hereby affirm under penalty of perjury that I am licensed under the provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

LICENSE CLASS A, C21 STATE LICENSE NUMBER 431984 EXPIRE DATE 12/31/08

Hazardous Materials: Indicate if the intended occupancy will use chemicals. Initialing YES acknowledges that H & S Code Sections 25505, 25533 & 25534 as well as filing directions were made available to you. YES NO X

WORKERS' COMPENSATION DECLARATION I hereby affirm under penalty of perjury one of the following declarations: I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. X I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier Redwood Fire & Casualty

Policy Number: W-7A38098 Exp: 10/1/08

(*This section need not be completed if the permit is for one hundred dollars (\$100) or less.) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and agree that if I should become subject to workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR COE, INTEREST AND ATTORNEY'S FEES.

I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building, construction, and hereby authorize representatives of this agency to enter upon the above-mentioned property for inspection purposes. I (we) further agree to save, indemnify and keep harmless the City of Petaluma against liabilities, judgments, costs and expenses which may in any way accrue against said city in consequence of the granting of this permit and will pay all expenses including attorney's fees in connection therewith. All work performed by virtue of this permit must conform to plans and specifications and application filed by the owner or his authorized agent with the Building Inspection Division. This permit does not constitute approval of any violation of the above recited provisions, nor of any state or city ordinance.

Signature X [Handwritten Signature] Print Name X Dustin D Davis Date 4-21-08



CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

ENVIRONMENTAL

OCT 21 2003

David Glass
Mayor

Keith Canavero
Mike Harris
Mike Henly
Bryant Moynihan
Mike O'Brien
Pamela Torfitt
Councilmembers

NOTICE AND ORDER

Per The Abatement of Dangerous Buildings Ch. 4

January 2, 2003

To: Darling Delaware Company, Inc.
251 O'Connor Ridge Blvd., Suite 370
Irving, TX 75038-6525

REGARDING ADDRESS: 2592 Lakeville Highway, Petaluma, CA

LOCATION DESCRIPTION: The property is located at the west end of Casa Grande Road. Buildings on the property consist of a Single Family Dwelling, an abandoned industrial tallow plant and several outbuildings, such as barns and garages.

ASSESSOR'S PARCEL NUMBER: 005-060-042

DATE OF INSPECTION: January 31, 2002

CONDUCTING INSPECTION: Clifford Kendall, Deputy Chief Building Official

THE BUILDING OFFICIAL HAS FOUND THE ABOVE BUILDING DANGEROUS AND UNINHABITABLE DUE TO THE BELOW CONDITIONS.

The above referenced structures are hereby declared dangerous and uninhabitable, as per Uniform Code For The Abatement Of Dangerous Buildings, Chapter 3, Section 302 Item # 15 and #18 for the following reasons:

The buildings on the property have been abandoned and because of lack of maintenance and faulty construction have caused dilapidation and deterioration to constitute a public nuisance.

Determination of Chief Building Official

RECEIVED

MAY 15 2008

BUILDING DIV.

10000589

FILE COPY

D1007441

Community Development
Department
11 English Street
Petaluma, CA 94952
E-Mail
cdd@ci.petaluma.ca.us

Code Enforcement
Phone (707) 778-4469
Fax (707) 778-4498
E-Mail
codeenforcement@
ci.petaluma.ca.us

Engineering
Phone (707) 778-4301
Fax (707) 778-4498

Inspection Services
Phone (707) 778-4301
Fax (707) 778-4498
To Schedule Inspections:
Phone (707) 778-4479

Permits
Phone (707) 778-4301
Fax (707) 778-4498

Planning
Phone (707) 778-4301
Fax (707) 778-4498

It is my determination as Chief Building Official that the buildings are to be demolished.

Corrective Action To Be Taken

You must see that the habitants are vacated and permits to demolish all structures on property are obtained and approved by the Building Official within sixty (60) days from the date of the order.

If the work is not commenced within the time specified, I will order the building vacated and posted to prevent further occupancy until the work is complete, and may proceed to cause the work to be done and charge the costs thereof against the property or its owner.

Any person having any record title or legal interest in the property may appeal from the notice and order or any action of the Building Official to the board of appeals, provided the appeal is made in writing as provided in this code and filed with the Building Official within 30 days from the date of service of this notice and order. Failure to appear will constitute a waiver of all right to an administrative hearing and determination of the matter.

CITY OF PETALUMA

ACTION REPORT

Inquiry
 Complaint

Date Received: August 4, 2003

Date Closed:

Name of Caller: Jodi Winters, Trammel Crow Residential
Caller's Address: 2682 Bishop Drive, Suite 101, San Ramon, CA 94583
Caller's Phone Number: 925.901.1896

City Employee/Department Receiving Call: Jane Thomson, Code Enforcement Officer

Address of Inquiry/Complaint: 2044 Casa Grande Road

Received Via: Telephone Letter In Person

Statement as to Nature of Call: Royal Tallow

1. Accessory structure next to property line fencing is disintegrating and falling onto the fence
2. Believes there to be hazardous materials on site that need to be removed/cleaned up
3. The main building is not secured and is an attractive nuisance
4. The property is not secured, and children are accessing it and the buildings

Route to:

<input type="checkbox"/> Animal Control	<input type="checkbox"/> Finance	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Building Division <i>CK/LJS</i>	<input checked="" type="checkbox"/> Fire	<input type="checkbox"/> Sonoma County Health
<input type="checkbox"/> City Attorney	<input type="checkbox"/> Parks	<input type="checkbox"/> Traffic Committee
<input type="checkbox"/> City Clerk	<input checked="" type="checkbox"/> Planning	<input type="checkbox"/> Transit
<input checked="" type="checkbox"/> City Manager	<input type="checkbox"/> Police	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Engineering	<input type="checkbox"/> Public Works	

REPORT OR ACTION TAKEN

(Attach Additional Documentation as Required)

Date: _____ By: _____

Complainant / Inquirer was notified of the outcome of complaint/inquiry by:
Mail / Phone / In Person on: _____ by: _____

City Of Petaluma Parcel Information Report
 APN #005060042

APN	005060042
Address	CASA GRANDE RD
Use Code	0202
Tax Rate Area	003011
Land Size (Sq Ft)	811,523
Owner Name	DARLING DELAWARE COMPANY INC
In Care Of	
Owner Address	251 OCONNOR RIDGE BLVD STE 370
Owner City/State	IRVING TX
Owner Zip	750386525
Com/Ind Year Built	1942
Total Bldg Area (Sq Ft)	000020606
Single Family Res Year Built	1941
Living Area (Sq Ft)	000000962
Bedrooms	02
Bathrooms	01
Total Living Area (Sq Ft)	000000000
Multi Family Res Year Built	0000
Number of Units	000
Number of Structures	01
Sale Price	000000000
Recording Date	010175
Official Record Number	75R2185217

1/27/03

Darling Delaware Company Inc
251 O'Connor ridge Blvd Ste 370
Irving, TX 750386525

RE: Royal Tallow & Soap Co. Inc./ 2592 Lakeville Highway

Dear Sirs:

On June 8, 2001 a demolition permit was issued to Speelman Excavation for the partial demolition of a truck garage (Approx 1200 sq.ft. to be removed) and for the removal of contaminated soil beneath slab to a five-foot depth. As of this date the work has not been completed and no inspections have been requested.

As you may well know there is a large Apartment complex under construction on the adjacent parcel to yours. With this in mind the City of Petaluma is very concerned with the condition of your property. It is the City of Petaluma's desire that you as the legal property owner will acquire permits to remove the potential attractive nuisance that may exist due to the vacated and dilapidated condition of the buildings on your property.

Please contact me upon receipt of this letter to further discuss this matter.

Sincerely,

Clifford Kendall
Deputy Chief Building Official

c: Mike Moore

address file



COMPLIANCE & ENFORCEMENT DIVISION

Regulation 11, Rule 2

Acknowledgement of Notification and Payment of Fees

4/10/2008

Daniel O Davis Inc
1051 Todd Road
Santa Rosa, CA 95407

Job No: 2Y944

Invoice No: 1XN52

The Bay Area Air Quality Management District (BAAQMD) acknowledges receipt of your payment and your Asbestos Removal or Demolition Plan described as: **Demolition**

Site address 2044 Lakeville Hwy
 Petaluma, CA 94954

Start Date April 22, 2008
Completion Date July 22, 2008

Removal amounts of friable ACM linear feet square feet cubic feet

Should it become necessary to revise this plan, please do so in the spaces provided below and immediately copy the District by fax or by mail.

REGULATION 11-2 REVISION

BAAQMD J# 2Y944

REVISION #	START DATE	COMPLETION DATE
1	___/___/___	___/___/___
2	___/___/___	___/___/___
3	___/___/___	___/___/___
4	___/___/___	___/___/___
5	___/___/___	___/___/___

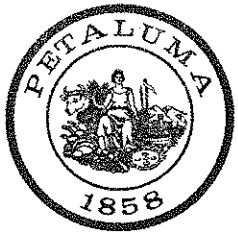
Handwritten signature/initials

NOTE: This form is not intended as a verification of either the completeness of your original notification or of its compliance with BAAQMD Regulation 11-2. If you have any questions about this acknowledgment please call our office at (415) 749-4762.

RECEIVED

APR 21 2008

FILE COPY



CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

David Glass
Mayor

Chris Albertson
Teresa Barrett
Mike Harris
Mike Healy
Gabe Kearney
Tiffany Renée
Councilmembers

REQUEST FOR PUBLIC RECORDS

RECORDS REQUEST MADE BY:

NAME: Kathryn Smith DATE: October 28, 2018

ADDRESS: 520 3rd Street, Suite 209, Oakland CA 94607 PHONE: 510-306-8508

PROPERTY/SITE LOCATION:

ADDRESS #1: 2044 & 2592 Lakeville Highway, Petaluma CA 94954 APN # _____

ADDRESS #1: 0 & 2044 Casa Grande Road, Petaluma CA 94954 APN # _____

RECORDS INFORMATION:

The Petaluma Fire Department is the Certified Unified Program Agency (CUPA) for the City of Petaluma and typically maintains files and records that may be used for Environmental Site Assessments. City staff will pull matching files and may request clarifying information that could help identify the records sought. Within ten (10) days of receipt of a request, City staff will determine whether the request seeks non-exempt records or parts of records in the City's possession and inform the requester. In some circumstances, the City may have up to an additional fourteen (14) days to make its determination upon proper notice to the requester. The City will inform requesters of the time and date when non-exempt records or parts of records will be made available. (California Government Code sections 6253, 6253.1.)

Check the box for the type of records sought:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Underground Storage Tank Records | <input checked="" type="checkbox"/> Above-ground Storage Tank Records |
| <input checked="" type="checkbox"/> Hazardous Materials/Waste Records | <input type="checkbox"/> Non-Hazardous Materials/Waste Records |
| <input type="checkbox"/> Fire Code | <input type="checkbox"/> Other (please be as specific as possible) |

Do you wish to have copies made?

How many of each?

The City may require payment of the direct cost of duplication or of the applicable statutory fee before providing copies of City records. The direct cost of duplication of most City records is \$0.15 per page. The statutory fee that applies to copies of reports and statements filed under the Political Reform Act is \$0.10 per page plus a retrieval fee of \$5.00 per request. City staff can provide copy charges that apply to other media. Requests to ship copies may be subject to payment of shipping costs. (California Government Code sections 6253, 81008.)

Number of copies made @ \$0.10 per page	_____
Number of copies made at \$0.15 per page	_____
Retrieval cost (if applicable)	_____
Shipping cost (if applicable)	_____
Amount due	_____

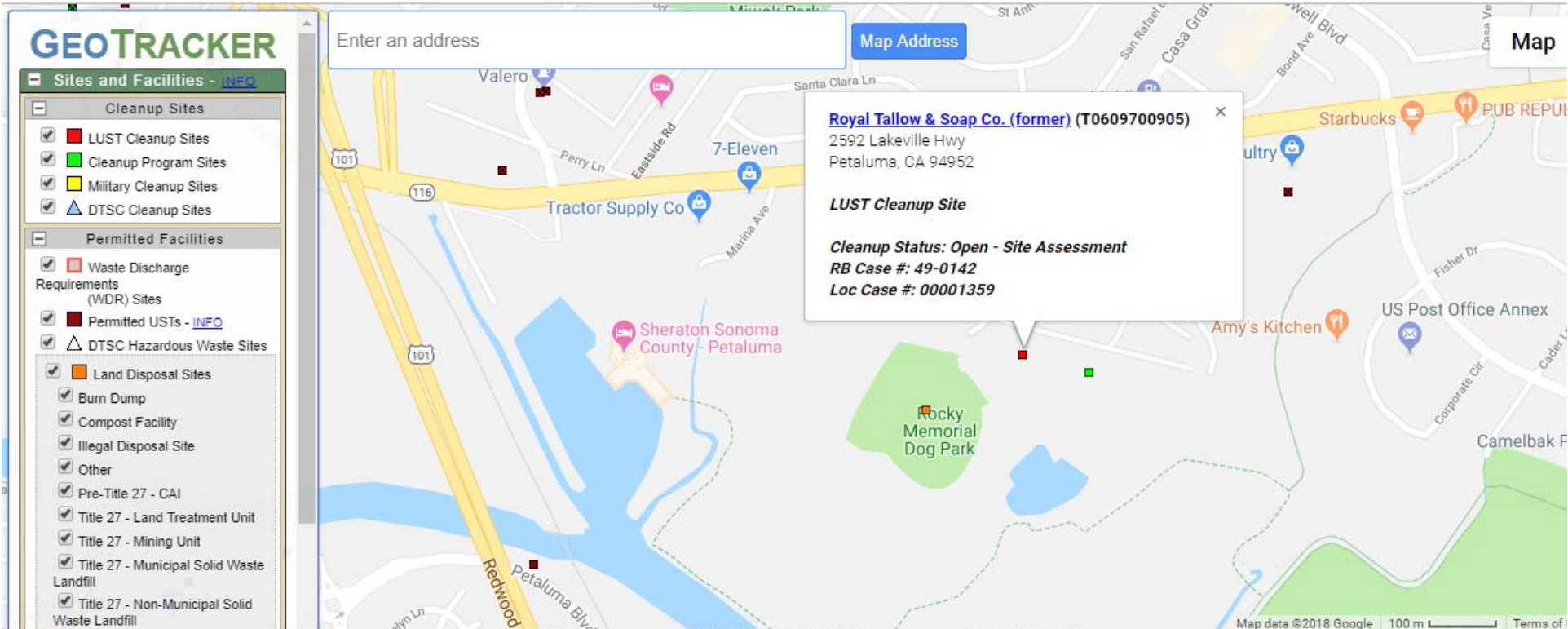
06/06/12

Fire Department
198 "D" Street
Petaluma, CA 94952

Phone (707) 778-4390
Fax (707) 762-4547

Fire Prevention Bureau
11 English Street
Petaluma, CA 94952

Phone (707) 778-4389
Fax (707) 776-3642



Site Name	Case ID	Status	Address	Location
METRON SUPER GAS	T0609700070	COMPLETED - CASE CLOSED	1600 LAKEVILLE ST	PETALUMA
NICK BARBIERI TRUCKING, LLC DBA NORTH BAY PETROLEUM	T0609766367	COMPLETED - CASE CLOSED	910 BAYWOOD DR	PETALUMA
PETALUMA LANDFILL - CASA GRANDE	T10000000111	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	??	?
PETALUMA POULTRY PROCESS	T0609700883	COMPLETED - CASE CLOSED	2700 LAKEVILLE HWY	PETALUMA
ROYAL TALLOW & SOAP CO. (FORMER)	T0609700905	OPEN - SITE ASSESSMENT	2592 LAKEVILLE HWY	PETALUMA
SKOFF TRUCKING	T0609700924	COMPLETED - CASE CLOSED	1 CASA GRANDE RD	PETALUMA
STERO DISHWASHING MACHINE	T0609700949	COMPLETED - CASE CLOSED	3200 LAKEVILLE HWY	PETALUMA

[Tools](#)[Reports](#)[UST Case Closures](#)[Information](#)

2592 LAKEVILLE HIGHWAY (T10000011322) - [\(MAP\)](#)

[SIGN UP FOR EMAIL ALERTS](#)

2592 LAKEVILLE HIGHWAY
 PETALUMA, CA
 SONOMA COUNTY
 CLEANUP PROGRAM SITE ([INFO](#))
[PRINTABLE CASE SUMMARY / CSM REPORT](#)

CLEANUP OVERSIGHT AGENCIES
 SAN FRANCISCO BAY RWOCB (REGION 2) (**LEAD**) - CASE #: 2140.4004
 CASEWORKER: [ALYX KARPOWICZ](#)

[Summary](#) [Cleanup Action Report](#) [Regulatory Activities](#) [Environmental Data \(ESI\)](#) [Site Maps / Documents](#) [Community Involvement](#) [Related Cases](#)

Regulatory Profile

[PRINTABLE CASE SUMMARY](#)[CLEANUP STATUS](#) - [DEFINITIONS](#)

OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION AS OF 2/16/2018 - [CLEANUP STATUS HISTORY](#)

POTENTIAL CONTAMINANTS OF CONCERN

LEAD

POTENTIAL MEDIA OF CONCERN

SOIL

FILE LOCATION

ALL FILES ARE ON GEOTRACKER OR IN THE LOCAL AGENCY DATABASE
 NONE SPECIFIED

USER DEFINED BENEFICIAL USE

DESIGNATED BENEFICIAL USE(S) - [DEFINITIONS](#)

MUN, AGR, IND, PROC

DWR GROUNDWATER SUB-BASIN NAME

Petaluma Valley (2-001)

CALWATER WATERSHED NAME

San Pablo - Petaluma River (206.30)

Site History

Casa Grande Landfill was operated on the property west of the Site from possibly before 1942. The landfill stopped accepting wastes in 1991 and was officially closed in 1994. During the early 1940s and 1950s the landfill activity was close to the boundary between the two properties and it appears that some debris material may have been placed onto the Site.

[Tools](#)[Reports](#)[UST Case Closures](#)[Information](#)

ROYAL TALLOW & SOAP CO. (FORMER) (T0609700905) - [\(MAP\)](#)

[SIGN UP FOR EMAIL ALERTS](#)

2592 LAKEVILLE HWY
 PETALUMA, CA 94952
 SONOMA COUNTY
 LUST CLEANUP SITE ([INFO](#))
[PRINTABLE CASE SUMMARY / CSM REPORT](#)

CLEANUP OVERSIGHT AGENCIES
 SONOMA COUNTY LOP ([LEAD](#)) - CASE #: 00001350
 CASEWORKER: [J. GLENN MORELLI](#)
 SAN FRANCISCO BAY RWQCB (REGION 2) - CASE #: 49-0142
 CASEWORKER: [Regional Water Board](#)
 CASEWORKER: [ALYX KARPOWICZ](#)

CUF Claim #:	6550
CUF Priority Assigned:	D
CUF Amount Paid:	\$62,833

[Summary](#) [Case Reviews](#) [Cleanup Action Report](#) [Regulatory Activities](#) [Environmental Data \(ESI\)](#) [Site Maps / Documents](#) [Community Involvement](#) [Related Cases](#) [LUST CUF Data](#)

Regulatory Profile

[PRINTABLE CASE SUMMARY](#)[CLEANUP STATUS - DEFINITIONS](#)

OPEN - SITE ASSESSMENT AS OF 12/9/2015 - [CLEANUP STATUS HISTORY](#)

POTENTIAL CONTAMINANTS OF CONCERN

GASOLINE

FILE LOCATION

LOCAL AGENCY

DWR GROUNDWATER SUB-BASIN NAME

Petaluma Valley (2-001)

USER DEFINED BENEFICIAL USE

GW - GROUNDWATER RECHARGE

POTENTIAL MEDIA OF CONCERN

OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER)

DESIGNATED BENEFICIAL USE(S) - [DEFINITIONS](#)

MUN, AGR, IND, PROC

CALWATER WATERSHED NAME

San Pablo - Petaluma River (206.30)

Site History

Site was closed in 2004. AEI Consultant's "Phase II Subsurface Investigation Report" dated September 2, 2014 indicates soil and groundwater contamination that greatly exceeds the levels when the site was closed in 2004. The site is reopened as of 12/9/15.



Matthew Rodriguez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Barbara A. Lee, Director
1001 I Street
P.O. Box 806
Sacramento, CA 958120806



Edmund G. Brown Jr.
Governor

Facility Search Results

Selection Criteria:

Facility:
Search on: Physical Address
Street: lakeville
City: petaluma
Status: Active and Inactive
Sort Direction: asc
Sorted By: Address
Records Found: 162

EPA ID Number	Name	Address	City	Zip
CAC002604129	LAKE VILLE RESORT APTS	1 LAKEVILLE CIR	PETALUMA	949545753
CAC002748194	ENCLAVE AT ADOBE CREEK	1 LAKEVILLE CIR	PETALUMA	949545753
CAC002806658	ENCLAVE AT ADOBE CREEK	1 LAKEVILLE CIR	PETALUMA	949545753
CAC001378952	MCPHAIL FUEL	1000 LAKEVILLE	PETALUMA	949520000
CAC002420903	MCPHAIL FUEL	1000 LAKEVILLE	PETALUMA	949520000
CAC000244825	1X MCPHAIL'S INC	1000 LAKEVILLE ST	PETALUMA	949540000
CAL000161794	SHELL	1001 LAKEVILLE	PETALUMA	949520000
CAC002572218	S & L PAINTING	1001 LAKEVILLE ST	PETALUMA	94952
CAL000304547	LAKEVILLE SHELL	1001 LAKEVILLE ST	PETALUMA	94952
CAL000350883	AU ENERGY-LAKEVILLE SHELL	1001 LAKEVILLE ST	PETALUMA	949523331
CAR000127431	SHELL SERVICE STATION	1001 LAKEVILLE ST	PETALUMA	94952
CAR000184465	CHEVRON 307243	1002 LAKEVILLE ST	PETALUMA	949523332
CAL000370558	OILSTOP DRIVE THRU OIL CHANGE	1004 LAKEVILLE ST	PETALUMA	94952
CAL000058943	TOMS AUTO WORKS	1010 LAKEVILLE HWY	PETALUMA	949520000
CAL000213120	TRANSMAN	1010 LAKEVILLE HWY UNIT B4	PETALUMA	949520000
CAC002580307	MCPHAIL'S INC	1010 LAKEVILLE ST	PETALUMA	94952
CAC002596710	IN N OUT BURGER	1010 LAKEVILLE ST	PETALUMA	949520000
CAL000234348	ENGINE DYNAMICS LLC	1010 LAKEVILLE ST	PETALUMA	949520000
CAC002564439	CALIFORNIA ROOF SAVERS	1010 LAKEVILLE ST STE 3B	PETALUMA	949520000
CAL000163518	HAMMERS SKI AND MARINE INC	1016 LAKEVILLE ST	PETALUMA	949520000
CAL000276120	HAMMER'S SERVICE LLC	1016 LAKEVILLE ST	PETALUMA	949523332
CAL000058865	COURTESY AUTO & TRUCK REPAIR	1051 A LAKEVILLE ST	PETALUMA	949520000
CAL000303750	ACCU-LINE BRAKE & WHEEL	1051 LAKEVILLE ST STE A	PETALUMA	949523331
CAL000396546	ACCU-LINE BRAKE & WHEEL	1051 LAKEVILLE ST UNIT A	PETALUMA	949523331
CAL000305156	C.L.Y. INC-DBA SONOMA MARIN CONST POINT PACIFIC DRILLING	1077 LAKEVILLE ST	PETALUMA	949523331
CAC002975588	SONOMA MARIN CONSTRUCTION	1077 LAKEVILLE STREET	PETALUMA	94952
CAL000057963	FREY'S AUTOMOTIVE SERVICE	121 LAKEVILLE ST	PETALUMA	949520000
CAC002963815	CLOVER SONOMA	121 LAKEVILLE STREET	PETALUMA	94952
CAC000723056	JOYCE MADDALENA	139 LAKEVILLE STREET	PETALUMA	949520000
CAC002911677	SONOMA-MARIN AREA RAIL TRANSIT DISTRICT (SMART)	1720 LAKEVILLE HIGHWAY	PETALUMA	94954
CAL000091463	TRENCH PLATE RENTAL CO	1721 LAKEVILLE HWY	PETALUMA	949540000
CAC000055845	1X BIG 4 RENTS	1731 LAKEVILLE HWY	PETALUMA	949280000
CAC002662702	RENTAL CENTER PROPERTIES CORP	1731 LAKEVILLE HWY	PETALUMA	94954
CAC002677897	HERTZ EQUIPMENT RENTAL	1731 LAKEVILLE HWY	PETALUMA	949545371
CAD983647611	HERTZ EQUIPMENT RENTAL	1731 LAKEVILLE HWY	PETALUMA	949545371
CAL000189421	PETALUMA FRENCH CLEANERS	2000 LAKEVILLE HWY	PETALUMA	949540000
CAL000288513	PETALUMA FRENCH CLEANERS	2000 LAKEVILLE HWY	PETALUMA	94954
CAR000012633	CLEANERS 2000	2000 LAKEVILLE HWY	PETALUMA	949540000
CAR000170522	HOME DEPOT HD 1382	2000 LAKEVILLE HWY	PETALUMA	949540000
CAL000370544	TRACTOR SUPPLY COM	2000 LAKEVILLE HWY STE A	PETALUMA	94954

CAL000300714	PETALUMA FRENCH CLEANERS	2000 LAKEVILLE HWY STE E	PETALUMA	94954
CAC002629055	LANDS OF BAYWOOD LLC	2044 LAKEVILLE HWY	PETALUMA	94954
CAL000365042	FRONTROW CALYPSO LLC	2080 LAKEVILLE HWY	PETALUMA	949546713
CAL000332871	MAC CONSTRUCTION INC DBA DIVISION SEVEN	22 LAKEVILLE ST	PETALUMA	949523125
CAC000162333	1X ROYAL TALLOW AND SOAP	2592 LAKEVILLE HWY	PETALUMA	949520000
CAC002207113	DARLING INTL INC	2592 LAKEVILLE HWY	PETALUMA	949520000
CAC002252793	DARLING INTERNATIONAL	2592 LAKEVILLE HWY	PETALUMA	949520000
CAC002368151	DARLING INTERNATIONAL INC	2592 LAKEVILLE HWY	PETALUMA	949520000
CAC000011411	1X KAYO OIL CO	2601 LAKEVILLE HWY	PETALUMA	952410000
CAC002324817	ULTRAMAR INC	2601 LAKEVILLE HWY	PETALUMA	949540000
CAC002563563	USA PETROLEUM STATION 3703	2601 LAKEVILLE HWY	PETALUMA	94954
CAL000002063	KAYO OIL COMPANY	2601 LAKEVILLE HWY	PETALUMA	949540000
CAL000239789	BEACON STATION #3703	2601 LAKEVILLE HWY	PETALUMA	949540000
CAL000252787	Tesoro 67093	2601 LAKEVILLE HWY	PETALUMA	949545654
CAR000142141	TESORO MOBIL 68186	2601 LAKEVILLE HWY	PETALUMA	949540000
CAC001063144	PETALUMA POULTRY	2700 LAKEVILLE HWY	PETALUMA	949540000
CAL000089028	PETALUMA ACQUISITION LLC DBA PETALUMA POULTRY PROCESSORS	2700 LAKEVILLE HWY	PETALUMA	94955
CAL000272169	PETALUMA ACQUISITION LLC	2700 LAKEVILLE HWY	PETALUMA	949545606
CAL922912746	PETALUMA POULTRY	2700 LAKEVILLE HWY	PETALUMA	949547368
CAX000017095	PETALUMA POULTRY PROCESSORS	2700 LAKEVILLE VILLA HWY.	PETALUMA	949520000
CAC002740394	CARLOS ALICEA	29 LAKEVILLE ST	PETALUMA	949523124
CAC002740397	CARL'S ALICEA	29 LAKEVILLE ST	PETALUMA	949523124
CAL000363532	ALL SMOG	29 LAKEVILLE ST	PETALUMA	949523124
CAL921765680	GOLDEN STATE DIESEL	29 LAKEVILLE ST	PETALUMA	949520000
CAL000188618	HOT RODZ	29A LAKEVILLE ST	PETALUMA	949520000
CAL000376278	ALL REPAIR	29A LAKEVILLE ST	PETALUMA	94952
CAL912693130	GOLDEN STATE DIESEL	29A LAKEVILLE STREET	PETALUMA	949520000
CAC000044321	1X HUNT AND BEHRENS	30 LAKEVILLE STREET	PETALUMA	949520000
CAD981388564	THE STERO CO	3200 LAKEVILLE HWY	PETALUMA	949520000
CAX000130252	STERO DISHWASHING MANUFACTURING CO	3200 LAKEVILLE HWY	PETALUMA	949520000
CAL000426438	PRS STAINLESS FABRICATION LLC	3200 LAKEVILLE HWY STE 110	PETALUMA	94954
CAL000409874	SYNERGY HEALTH AST LLC	3200 LAKEVILLE HWY STE 120	PETALUMA	949545675
CAC002902370	PRS STAINLESS FABRICATION	3200 LAKEVILLE HWY, STE. 110	PETALUMA	94954
CAD983599648	PETALUMA TRANSMISSIONS	322 LAKEVILLE ST	PETALUMA	949520000
CAL000032673	COLOR WHEEL THE	322 LAKEVILLE ST	PETALUMA	949520000
CAL000141359	LAKEVILLE AUTOBODY & PAINT INC	322 LAKEVILLE ST	PETALUMA	949523131
CAL921345730	PETALUMA TRANSMISSION	322 LAKEVILLE STREET	PETALUMA	949520000
CAL000097341	BRANDNER VETERINARY HOSPITAL	347 LAKEVILLE ST	PETALUMA	949520000
CAL000414666	RED RABBIT VETERINARY HOSPITAL INC DBA BRANDNER VETERINARY HOSPITAL	347 LAKEVILLE ST	PETALUMA	94952
CAX000075796	SOLO OPTICAL	3600 LAKEVILLE HWY.	PETALUMA	949520000
CAL000034386	ACCULAB ENVIRONMENTAL SERVICES	3700 LAKEVILLE HIGHWAY	PETALUMA	949540000
CA0000602953	D AND M LABORATORIES	3700 LAKEVILLE HWY	PETALUMA	949540000
CAL000277803	LABCON NORTH AMERICA	3700 LAKEVILLE HWY	PETALUMA	94954
CAD982034597	LABCON NORTH AMERICA	3700 LAKEVILLE HWY STE 200	PETALUMA	949547611
CAX000082875	FIREMAN'S FUND INSURANCE COMPANIES	3700 LAKEVILLE HWY.	PETALUMA	949520000
CAC002597938	BROOKS AUTOMATION INC POLYCOLD SYSTEMS	3800 LAKEVILLE HWY	PETALUMA	949545673
CAL000181651	FRIEDMAN BROTHERS HARDWARE INC	3800 LAKEVILLE HWY	PETALUMA	949540000
CAL000232281	I G C POLYCOLD SYSTEMS	3800 LAKEVILLE HWY	PETALUMA	949540000
CAL000291239	POLYCOLD SYSTEMS	3800 LAKEVILLE HWY	PETALUMA	949540000
CAL000300828	BROOKS AUTOMATION INC	3800 LAKEVILLE HWY	PETALUMA	949545673
CAL000429157	KAISER PERMANENTE MEDICAL OFFICE BUILDING	3900 LAKEVILLE HWY	PETALUMA	94954
CAC002607530	RAMOS ENVIRONMENTAL SERVICES	4002 LAKEVILLE HWY	PETALUMA	949549262
CAL000299418	KIEWIT PACIFIC CO	4002 LAKEVILLE HWY	PETALUMA	949549262
CAC002596295	KIEWIT PACIFIC	4104 LAKEVILLE HWY	PETALUMA	94954
CAL000378291	SILACCI AG SERVICES	4349 LAKEVILLE HWY	PETALUMA	94954
CAL000220223	PACIFIC COAST CUTTERS INC	450 LAKEVILLE ST STE B	PETALUMA	949520000
CAC002623130	TOMROSE CONSTRUCTION INC	450 LAKEVILLE ST STE C	PETALUMA	949523155
CAL000304110	DBA ARMORED COATINGS	450 LAKEVILLE ST STE C	PETALUMA	94952
CAC002810893	AANENSON WILDCAT INC DBA WILDCAT ENGINEERING	450 LAKEVILLE ST STE-A	PETALUMA	94952
CAL000240494	WILD CATS UNDERGROUND & ENGINEERING	451 LAKEVILLE ST	PETALUMA	949523132
CAL000333844	GHILOTTI BROS INC	4991 LAKEVILLE HWY	PETALUMA	94954
CAL000055646	HOOTS AUTO & DIESEL	501 LAKEVILLE ST	PETALUMA	900000000
CAL000262390	SPORTBIKE DYNAMICS	501 LAKEVILLE ST	PETALUMA	949523301
CAL000024002	HOOTS AUTO & DIESEL ELECTRIC	501 LAKEVILLE ST STE H	PETALUMA	949520000

CAC002612900	BAYER HEALTH CARE	5070 LAKEVILLE HWY	PETALUMA	949549518
CAC002249689	PETERSON PAVING	51 LAKEVILLE ST	PETALUMA	949520000
CAC002778580	CLOVER STORNETTA FARMS INC	51 LAKEVILLE ST	PETALUMA	949523163
CAL000044155	CLINTON GOW INC	51 LAKEVILLE ST	PETALUMA	949520000
CAL000176684	LES' TRUCK & AUTO REPAIR	51 LAKEVILLE ST	PETALUMA	949520000
CAL000254865	CLOVER STORNETTA FARMS INC	51 LAKEVILLE ST	PETALUMA	94952
CAL000409339	FIRST VEHICLE SERVICES #49770	51 LAKEVILLE ST	PETALUMA	94952
CAL000428087	RYDER TRUCK RENTAL INC 1203	51 LAKEVILLE ST	PETALUMA	94952
CAL000017145	ALTENREUTHER BROS	5100 LAKEVILLE HWY	PETALUMA	949520000
CAL000083318	JACOBSEN RANCHES	5175 LAKEVILLE HIGHWAY	PETALUMA	949540000
CAL000266562	M MASELLI & SONS INC	519 LAKEVILLE ST	PETALUMA	94952
CAC002712176	TOLAY LAKE REGIONAL PARK	5869 LAKEVILLE HIGHWAY	PETALUMA	94954
CAC002608778	CARDOZA RANCHES	5869 LAKEVILLE HWY	PETALUMA	949520000
CAL000017175	CARDOZA RANCHES	5869 LAKEVILLE HWY	PETALUMA	949520000
CAL912325163	CARDOZA RANCHES	5869 LAKEVILLE HWY	PETALUMA	949540000
CAC002612000	COUNTY OF SONOMA-FACILITIES OPERATIONS	5870 LAKEVILLE HWY	PETALUMA	949549271
CAL000220755	TREASURY MUTUAL LTD	5875 LAKEVILLE HWY	PETALUMA	949549263
CAC002619642	DON SILACCI	6155 LAKEVILLE HWY	PETALUMA	94954
CAC002572224	PEGASUS RANCH	6525 LAKEVILLE HWY	PETALUMA	94954
CAC002635667	PEGASUS RANCH	6525 LAKEVILLE HWY	PETALUMA	94954
CAL000021014	LOREN AIR WEST	660 LAKEVILLE ST	PETALUMA	999520000
CAL000116514	BRUCES AUTOMOTIVE REPAIR	660 LAKEVILLE ST	PETALUMA	949527304
CAL000365935	THE HYBRID HAVEN	660 LAKEVILLE ST STE B	PETALUMA	949527304
CAC002962267	BRUCES AUTOMOTIVE REPAIR	660 UNIT A LAKEVILLE ST	PETALUMA	94952
CAL000308524	HENDRICKS DEVELOPMENT	6614 LAKEVILLE HWY	PETALUMA	94954
CAC002570059	FLOCCHINI ESTATE LLC	7078 LAKEVILLE HWY	PETALUMA	94954
CAL000316172	VINA MANAGEMENT SERVICE	7550 LAKEVILLE HWY	PETALUMA	949549563
CAL000414539	SONOMA HORSE PARK	7600 LAKEVILLE HWY	PETALUMA	949549593
CAC002322913	RIVERSIDE EQUESTRIAN CENTER	7600 LAKEVILLE RD	PETALUMA	949540000
CAC002293369	ALEXANDER ANOLIK	7650 LAKEVILLE HWY	PETALUMA	949540000
CAC002564414	SLEEPY HOLLOW DAIRY	7689 LAKEVILLE	PETALUMA	94954
CAC002594408	SONOMA LAND TRUST	7709 LAKEVILLE HWY	PETALUMA	949549260
CAL000006710	LARS ENGINES	82 LAKEVILLE ST	PETALUMA	949523125
CAL000141757	AUTO SALES & WRECKING	850 LAKEVILLE ST.	PETALUMA	949520000
CAL999141757	AUTO SALES & WRECKING	850 LAKEVILLE ST.	PETALUMA	949520000
CAL000114007	C & W AUTO WRECKERS	892 LAKEVILLE ST	PETALUMA	949523328
CAD982400863	DAVES AUTO BODY	896 LAKEVILLE RD	PETALUMA	949520000
CAL000234022	G & C AUTO BODY INC	896 LAKEVILLE ST	PETALUMA	949520000
CAL000374778	G & C AUTO BODY	896 LAKEVILLE ST	PETALUMA	94952
CAL000023996	CUSTOMLINE	901 LAKEVILLE ST	PETALUMA	949523329
CAL000393601	KELLY-MOORE PAINT CO INC	905 LAKEVILLE ST STE A-1	PETALUMA	949523329
CAC002223345	ALLEN BROADY	91 LAKEVILLE ST	PETALUMA	949520000
CAD981992340	CLOVER STORNETTA FARMS INC	91 LAKEVILLE ST	PETALUMA	949520000
CAL000182960	FAIRFAX FRENCH CLEANERS	915 LAKEVILLE ST	PETALUMA	949520000
CAL000306282	FAIRFAX FRENCH CLEANERS	915 LAKEVILLE ST	PETALUMA	949523329
CAL000083161	CALIFORNIA CRUSH	92 LAKEVILLE ST	PETALUMA	949520000
CAL000152011	CALIFORNIA CRUSH	92 LAKEVILLE STREET	PETALUMA	949520000
CAL000359891	SAVEMART SUPERMARKETS DBA LUCKY #740	939 LAKEVILLE ST	PETALUMA	949523329
CAR000249722	SAVEMART SUPERMARKETS DBA LUCKY #740	939 LAKEVILLE ST	PETALUMA	949523329
CAC000287473	1X MOBIL KAISER SAND & GRAVEL	950 LAKEVILLE ROAD	PETALUMA	949520000
CAC002275681	JOSEPH MCKENDRY FINE JEWELRY	961 LAKEVILLE STREET	PETALUMA	949520000
CAC002678961	BAYSIDE STRIPE AND SEAL INC	98 LAKEVILLE ST	PETALUMA	949523125
CAL000093865	METCALFE MACHINE AND ENGINE	98 LAKEVILLE ST	PETALUMA	949520000
CAC002586805	CITY OF PETALUMA	CORNER OF MADISON ST AT LAKEVILLE S	PETALUMA	94952
CAC002580320	US COURT OF ENGINEER	INTERSECTION OF MADISON & LAKEVILLE	PETALUMA	94952
CAL000009745	FIREMAN'S FUND ENVIRON LAB	LAKEVILLE HWY 2ND FLOOR	PETALUMA	949520000
CAX000133827	PACIFIC GAS & ELECTRIC CO	LAKEVILLE SUB-STATION	PETALUMA	949280000
CAC002530375	CITY OF PETALUMA	PETALUMA RIVER @ LAKEVILLE ST	PETALUMA	949520000

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Department of Toxic Substances Control



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Secretary for
Environmental Protection

Barbara A. Lee, Director
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P.O. Box 806
Sacramento, CA 958120806

Edmund G. Brown Jr.
Governor

EPA ID PROFILE

Map
ID Number: CAC000162333 **Status:** INACTIVE
Name: 1X ROYAL TALLOW AND SOAP **Inactive Date:** 1/1/1900 12:00:00 AM
County: SONOMA **Record Entered:** 3/30/1989 12:00:00 AM
NAICS: N/A **Last Updated:** 5/2/2000 12:00:00 AM

	Name	Address	City	State	Zip Code	Phone
Location	1X ROYAL TALLOW AND SOAP	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		--	SAN FRANCISCO	CA	941880000	
Owner	DARLING-DELAWARE CORP.	--	--	99	--	000000000
Operator/Contact	BARBARA GOMES, SECTY.	--	--	99	--	4156474890

Based Only Upon ID Number: CAC000162333

Calif. Manifests?	Non Calif. Manifests?	Transporter Registration?
N/A	N/A	N/A

California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type (if available) are on the next page

Calif. Manifest Counts and Total Tonnage

**No Records
Found**

Non California Manifest Total Tonnage**No Records
Found**

The Department of Toxics Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Report Generation Date: 11/14/2018



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EPA ID PROFILE

<u>Map</u>			
ID Number:	CAC002207113	Status:	INACTIVE
Name:	DARLING INTL INC	Inactive Date:	6/11/2001 12:00:00 AM
County:	SONOMA	Record Entered:	5/2/2000 12:00:00 AM
NAICS:	N/A	Last Updated:	6/11/2001 12:00:00 AM

	Name	Address	City	State	Zip Code	Phone
Location	DARLING INTL INC	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		251 OCONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	
Owner	DARLING INTERNATIONAL INC	251 OCONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	000000000
Operator/Contact	BILL MCMURTRY	251 OCONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	9722814409

Based Only Upon ID Number: CAC002207113

Calif. Manifests?	Non Calif. Manifests?	Transporter Registration?
Yes	N/A	N/A

California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type (if available) are on the next page

Calif. Manifest Counts and Total Tonnage

Top line represents Manifest Count and Bottom line represents Total Tonnage

Year	Generator	Trans. 1	Trans. 2	TSDF	ALT. TSDF
2000	7	0	0	0	0
	14.38040	0.00000	0.00000	0.00000	0.00000

Non California Manifest Total Tonnage

**No Records
Found**

Waste Code Matrix					
California	Generator	Trans. 1	Trans. 2	TSDF	Alt. TSDF
RCRA	Generator	Trans. 1	Trans. 2	TSDF	Alt. TSDF

[Waste Code Matrix as a spreadsheet](#)

The Department of Toxics Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Report Generation Date: 11/14/2018

California Waste Code by Year Matrix

ID Number: CAC002207113

Entity Type: Generator

2000 ▾

2018 ▾

Select Years

Calif. Code	Description	2000
181	OTHER INORGANIC SOLID WASTE	2.25000
213	HYDROCARBON SOLVENTS	0.05000
214	UNSPECIFIED SOLVENT MIXTURE	0.00500
221	WASTE OIL AND MIXED OIL	0.50140
222	OIL/WATER SEPARATION SLUDGE	9.17400
223	UNSPECIFIED OIL-CONTAINING WASTE	0.90000

331	OFF-SPEC, AGED, OR SURPLUS ORGANICS	1.31000
551	LABORATORY WASTE CHEMICALS	0.19000
	Grand Total	14.38040



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EPA ID PROFILE

<u>Map</u>			
ID Number:	CAC002252793	Status:	INACTIVE
Name:	DARLING INTERNATIONAL	Inactive Date:	9/11/2001 12:00:00 AM
County:	SONOMA	Record Entered:	11/1/2000 12:00:00 AM
NAICS:	N/A	Last Updated:	9/11/2001 12:00:00 AM

	Name	Address	City	State	Zip Code	Phone
Location	DARLING INTERNATIONAL	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		251 O'CONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	
Owner	DARLING INTERNATIONAL INC	251 O'CONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	9722814409
Operator/Contact	BILL MCMURTRY-VP	251 O'CONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	9722814409

Based Only Upon ID Number: CAC002252793

Calif. Manifests?	Non Calif. Manifests?	Transporter Registration?
Yes	N/A	N/A

California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type (if available) are on the next page

Calif. Manifest Counts and Total Tonnage

Top line represents Manifest Count and Bottom line represents Total Tonnage

Year	Generator	Trans. 1	Trans. 2	TSDF	ALT. TSDF
2000	2 1.69560	0 0.00000	0 0.00000	0 0.00000	0 0.00000

Non California Manifest Total Tonnage

**No Records
Found**

Waste Code Matrix					
California	Generator	Trans. 1	Trans. 2	TSDF	Alt. TSDF
RCRA	Generator	Trans. 1	Trans. 2	TSDF	Alt. TSDF

[Waste Code Matrix as a spreadsheet](#)

The Department of Toxics Substances Control (DTSC) takes every precaution to ensure the accuracy of data in the Hazardous Waste Tracking System (HWTS). However, because of the large number of manifests handled, inaccuracies in the submitted data, limitations of the manifest system and the technical limitations of the database, DTSC cannot guarantee that the data accurately reflect what was actually transported or produced.

Report Generation Date: 11/14/2018

California Waste Code by Year Matrix

ID Number: CAC002252793

Entity Type: Generator

2000 ▾

2018 ▾

Select Years

Calif. Code	Description	2000
151	ASBESTOS-CONTAINING WASTE	1.68560
181	OTHER INORGANIC SOLID WASTE	0.01000
	Grand Total	1.69560



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EPA ID PROFILE

<u>Map</u>			
ID Number:	CAC002368151	Status:	INACTIVE
Name:	DARLING INTERNATIONAL INC	Inactive Date:	1/11/2002 12:00:00 AM
County:	SONOMA	Record Entered:	5/15/2001 12:00:00 AM
NAICS:	N/A	Last Updated:	1/17/2002 12:00:00 AM

	Name	Address	City	State	Zip Code	Phone
Location	DARLING INTERNATIONAL INC	2592 LAKEVILLE HWY	PETALUMA	CA	949520000	
Mailing		251 O'CONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	
Owner	DARLING INTERNATIONAL INC	251 O'CONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	9722814409
Operator/Contact	BILL MCMURTRY - VP	251 O'CONNOR RIDGE BLVD STE 300	IRVING	TX	750380000	9722814409

Based Only Upon ID Number: CAC002368151

Calif. Manifests?	Non Calif. Manifests?	Transporter Registration?
Yes	N/A	N/A

California and Non California Manifest Tonnage Total and Waste Code by Year Matrix by Entity Type (if available) are on the next page

Calif. Manifest Counts and Total Tonnage

Top line represents Manifest Count and Bottom line represents Total Tonnage

Year	Generator	Trans. 1	Trans. 2	TSDF	ALT. TSDF
2001	1 0.42140	0 0.00000	0 0.00000	0 0.00000	0 0.00000

Non California Manifest Total Tonnage

**No Records
Found**

Waste Code Matrix					
California	Generator	Trans. 1	Trans. 2	TSDF	Alt. TSDF
RCRA	Generator	Trans. 1	Trans. 2	TSDF	Alt. TSDF

[Waste Code Matrix as a spreadsheet](#)

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Report Generation Date: 11/14/2018

California Waste Code by Year Matrix

ID Number: CAC002368151

Entity Type: Generator

2001 ▼

2018 ▼

Select Years

Calif. Code	Description	2001
151	ASBESTOS-CONTAINING WASTE	0.42140
	Grand Total	0.42140



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Facility Search Results

Selection Criteria:

Facility:
Search on: Physical Address
Street: casa
City: petaluma
Status: Active and Inactive
Sort Direction: asc
Sorted By: Address
Records Found: 16

EPA ID Number	Name	Address	City	Zip
CAC000184409	1X SKOFF, JERRY	#1 CASA GRANDE ROAD	PETALUMA	949520000
CAC002624513	MARTY SKOFF	1 CASA GRANDE RD	PETALUMA	949545653
CAL000072734	SKOFF TRUCKING INC	1 CASA GRANDE RD	PETALUMA	949545653
CAL000313450	MAUCH TRUCKING INC	1 CASA GRANDE RD	PETALUMA	949545653
CAL000252745	MICHAEL PAUL COMPANY INC	1200 CASA GRANDE RD	PETALUMA	94954
CAC001163648	DOOLITTLE PAINT MART	1310 CASA GRANDE RD	PETALUMA	949540000
CAL000411990	COSMOPROF BEAUTY	1310 CASA GRANDE RD STE A	PETALUMA	949547630
CAC001307040	GARY FILIPPINI	1549 CASA GRANDE RD	PETALUMA	949540000
CAC002625131	OLD ADOBE DEVELOPMENTAL SERVICES	235 CASA GRANDE RD	PETALUMA	949545604
CAX000119644	1X STATE OF CALIF DEPT OF TRANSPORTATION	25 CASA GRANDE RD	PETALUMA	945530000
CAL000071695	PETALUMA USD-CASA GRANDE HIGH SCHOOL	333 CASA GRANDE RD	PETALUMA	949540000
CAC002946001	CASA GRANDE HIGH SCHOOL	333 CASA GRANDE RD.	PETALUMA	94954
CAC000965280	PETALUMA CITY SCHOOLS/CASA GRANDE H.S.	333 CASA GRANDE ROAD	PETALUMA	949540000
CAL000062618	WEDGE ROOFING INC	5 CASA GRANDE RD	PETALUMA	949540000
CAL912825085	WEDGE ROOFING INC	5 CASA GRANDE RD	PETALUMA	949540000
CAD000304998	1X PETALUMA CITY SCHOOLS	CASA GRANDE TRAINING CENTER	PETALUMA	949520000

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Report Generation Date: 11/14/2018

tory for PLANT# >> 1300

Plant number 1300 A1300
Business name Royal Tallow & Soap Co
Location address 2592 Lakeville Hwy
City Petaluma, CA 94952
Telephone 707-762-2731
Mailing address P O Box 738
City Petaluma, CA 94953
Contact Jake L Gray, Manager
Address 2592 Lakeville Hwy
City Petaluma, CA 94952
Telephone (707) 762-2731
Permit engineer Leonard R Clayton, x4740
Former engineer Leonard R Clayton, x4740
Ownership type Private
Inside city limits Yes
Ceased operation 10/31/86, Closed

Plant #: 1300
Company name: Royal Tallow & Soap Co
Location: 2592 Lakeville Hwy, Petaluma, CA 94952

Application #: 30448
Project title: Retro rendering plt
Engineer: Leonard R Clayton [144]
Received: 10/10/84
Final disposition: Waived A/C, 12/10/84

Application #: 26750
Project title: Not available
Engineer: Wayne E Yeager [295]
Received: 11/21/78
Final disposition: AC Issued, 07/27/79

Application #: 29297
Project title: Not available
Engineer: Leonard R Clayton [144]
Received: 04/05/83
Final disposition: Canceled, 07/01/83

ENVIROSTOR

2592 Lakeville Highway, Petaluma, CA, USA Map Address

Map Satell

Sites and Facilities

Cleanup Sites

- Federal Superfund
- State Response
- Voluntary Cleanup
- School Cleanup
- Evaluation
- School Investigation
- Military Evaluation
- Tiered Permit
- Corrective Action

STATUS

All Statuses

Permitted Sites

- Operating
- Post-Closure
- Non-Operating

Other Sites

GIS Layers

Tools

Map data ©2018 Google | 100 m | Terms of Use | Report a

SITES CURRENTLY VISIBLE ON MAP 1 SITES LISTED [EXPORT THIS LIST TO](#)

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
QUARRY HEIGHTS	ACTIVE	VOLUNTARY CLEANUP	1600 PETALUMA BOULEVARD SOUTH	PETALUMA

From: [Public Records](#)
To: [Kathryn Smith](#)
Subject: Public Records Request No. 2018-10-0288
Date: Monday, October 29, 2018 5:24:59 PM

Dear Kathryn Smith,

Thank you for your request. We have searched our records and have no records that respond to your below request for:

0 & 2044 Casa Grande Road
Petaluma

If you have any questions or concerns, please call or e-mail me.

Sincerely,

Rochelle Reed
Public Records Section
BAAQMD
415-516-1916

APPENDIX F

PREVIOUS REPORTS

CLEAN CLOSURE PLAN
DEBRIS AREA
2592 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA



CLEAN CLOSURE PLAN

DEBRIS AREA

2592 LAKEVILLE HIGHWAY

PETALUMA, CALIFORNIA

APN: 005-060-042-000

Prepared for:

Mr. Keith Roberson
California Regional Water Quality Control Board - San Francisco Bay Region
1515 Clay Street
Oakland, CA 94612

Prepared on Behalf of:

Mr. Larry Wasem
Baywood LLC
414 Aviation Boulevard.
Santa Rosa, CA 95403-1069

February 8, 2016

Prepared by:



Christina J. Kennedy R.G.
Principal

CKG Environmental, Inc.
P.O. Box 246
St. Helena, California 94574
(707) 967-8080



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TABLES

Table 1	Concentration of Metals in Soil Samples
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PLATES

Plate 1	Site Location Map
Plate 2	Site Plan and Former Sample Locations
Plate 3	Pothole Locations and Residual Lead Map
Plate 4	Excavation Plan

APPENDICES

Appendix A	Health and Safety Plan
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1.0 INTRODUCTION

On behalf of Baywood LLC (Owners), CKG Environmental, Inc. (CKG) is pleased to provide this Clean Closure Plan (Closure Plan) for a burn debris area located at 2592 Lakeville Highway, Petaluma, California (Site). On August 5, 2015, CKG submitted the *Report of Potholing Exploration and Soil Sampling* (Potholing Exploration Report) followed on November 24, 2015 by the *Debris Layer Investigation Report* documenting the results of shallow soil investigations to define the extent of debris containing metals at the Site. Elevated concentrations of lead were detected in Site soils, and the area of impacted soils was roughly defined.

Clean closure for a solid waste disposal site refers to removing the waste materials, such as the lead-impacted soils, rather than leaving them in place, as may be the case with a landfill closure. Clean closure is defined to be complete when waste materials have been removed and residual remaining contaminant concentrations are at or less than background concentrations or cleanup levels established by the regulatory oversight agency.

This Closure Plan follows the State of California, CalRecycle, guidance document Local Enforcement Agency (LEA) Advisory #16 for Clean Closure, dated January 23, 1994. The activities necessary to implement a clean closure include:

1. Site Characterization, presented in Section 2;
2. Excavation and Material Management, presented in Section 3;
3. Confirmation and documentation of impacted material removal and disposal, as presented in Section 4; and
4. Postclosure maintenance, if needed, land use restrictions, and future land use, as presented in Section 4.

2.0 SITE CHARACTERIZATION

The Site has been the subject of several subsurface explorations and remediation due to the former presence of underground fuel storage tanks (USTs). These activities provide the basis to understand Site conditions, while the *Potholing Exploration Report* and the *Debris Layer Investigation Report* further defined the nature and extent of lead-impacted debris. This section provides the Property Description, Site Background Information, a Summary of Recent Site Characterization, and the Extent of Soil Removal Requirements.

2.1 Property Description

The property is currently vacant land located south of Lakeville Highway and southeast of Casa Grande Road in a mixed commercial and residential area of Petaluma, California, as shown on Plate 1. The Site is approximately 13 acres, surrounded by a barbed-wire security fence, and is being considered for residential redevelopment. A site plan of current conditions is included as Plate 2.

The property is occupied by a part-time caretaker using a trailer parked in the northeast corner of the property. Two large mounds of soil and rock fill material from an off-site source are located along the northern boundary, and a pile of concrete construction debris and Class II Aggregate are located in the central portion of the property.

The property lies at an elevation of approximately 10 feet above mean sea level. The nearest surface water body is the Petaluma River, located approximately 1,000 feet southwest of the property. The land surface slope and groundwater gradient are towards the Petaluma River. A wetland area lies between the property and the river, and wetland areas have been identified on the property as shown in Plates 1 and 2.

The surficial geology consists of artificial fill materials and alluvium overlying fine-grained marine and freshwater marsh deposits. Phase II investigation activities conducted in June 2014 (AEI Consultants, September 2, 2014), encountered clayey silt underlain by a silty sand layer that was underlain by a hard plastic clay. First groundwater was generally encountered in the native silty sand layer at an average depth of 12 feet below the original ground surface. Groundwater rose and equilibrated at depths ranging from three to eight feet below ground surface.

The debris materials consist of clays, sand, gravel, asphalt pieces, brick debris, and glass fragments. Stockpiled materials at the property are primarily concrete rubble. The average thickness/height of the stockpiles ranges between 10 and 12 feet.

2.2 Site Background

The property was occupied by the Royal Tallow and Soap Company who operated an animal rendering plant from 1941 through 1964 when it was sold to Darling Delaware. Darling

Delaware continued to operate the rendering plant until they converted it to a transfer station in the 1970's and shut it down in 1994. The buildings were demolished in 2008 and the property has been vacant since that time. Darling Delaware sold the property to Baywood in 2008.

Soil remediation activities were performed at the Site to address gasoline-range hydrocarbons present in soil to a depth of 5 feet below grade level (bgl) in the vicinity of two former gasoline UST excavations (Plate 2). Darling Delaware (Darling) implemented the soil remediation in accordance with the approved *Remediation Work Plan, Former Royal Tallow and Soap Facility, 2592 Lakeville Highway, Petaluma, California* (MFG, Inc., 2000). The cleanup activities were regulated by the County of Sonoma Department of Health Services, Environmental Health Division (SCEHD) and received regulatory closure on July 30, 2004.

In 2014, AEI Consultants, on behalf of DeNova Homes, a potential property buyer, conducted a Phase II subsurface investigation of potential concerns associated with former wastewater ponds at the Site. Of six samples collected in former pond areas only one sample, PA-3, contained elevated concentrations of analytes. AEI sample locations are shown on Plate 2. Sample PA-3 was collected at a depth of 2.5 feet ft. bgl and appeared to be beneath a layer of sediments in the former pond. Furthermore, the boring log for PA-3 described debris such as brick and glass fragments in the sample, suggesting that non-native material may have been placed in this area.

To assess whether PA-3 was an isolated anomaly or was the result of a more widespread impact, CKG collected four soil samples with an excavator in February 2015. One sample was collected at the original location of PA-3. The three other samples were collected 10 feet away from PA-3 to the north, southeast, and southwest. The soil samples were collected from a depth of 2.5 feet below ground surface, contained debris materials, and contained metal concentrations greater than the San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for residential land use.

To evaluate the location and extent of potential past debris disposal, CKG reviewed historical aerial photographs from various years from 1942 through 2012 as provided by Environmental Data Resources, Inc. (EDR). Based on the aerial photography it appears that a landfill was operated on the property west of the Site (currently a dog park) from possibly as early as 1942 through at least 1982. During the early 1950s the landfill activity was close to the boundary between the two properties and it appears that some fill material may have been placed onto the Site. This is believed to be the City of Petaluma's Casa Grande Landfill, which was closed by the City in 1994.

Based on the sampling results and aerial photographs, CKG recommended collecting additional samples to confirm that fill from the former adjacent landfill was the source of the detected analytes, and to and to assess the lateral and vertical extent of impact. The results of these investigation activities were presented in the *Potholing Exploration Report*.

2.3 Summary of Recent Site Characterization

In April and then in October, 2015, CKG conducted pothole exploration programs in an area that extends outward from PA-3 and encompasses the western side of the Site, as shown on Plate 3. The maximum planned depth of excavation was 10 feet below ground surface, although samples were collected at depths of one foot, two or 2.5 feet, and immediately beneath the apparent fill typically three feet below ground surface. The maximum depth of the debris fill encountered during the exploration was approximately five feet. If no debris was observed in a pothole, samples were not collected and the area was presumed to be free of elevated metals at that location.

Soil samples were analyzed for CAM 17 metals by the U.S. Environmental Protection Agency (EPA) Method 6020. The investigation also included four-point composite samples that were made from soil collected at selected sampling locations. These composite samples were analyzed to provide data to characterize the material for future disposal. These composite samples were analyzed for:

- RCRA Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag) by EPA Method 6020
- Volatile Organic Constituents (VOCs) by EPA Method 5035/8260B
- Semivolatile Organic Constituents (SVOCs) by EPA Method 8270D
- Polychlorinated biphenyls (PCBs) by EPA Method 3540/8082A
- TPH as gasoline, diesel and motor oil by EPA Method 8015C

If a metal total concentration exceeded ten times the California Soluble Threshold Limit Concentration (STLC) for the metal, then a WET test was conducted on that sample. Selected samples where WET test results exceeded the STLC limits were also analyzed by the Toxicity Characteristic Leaching Procedure (TCLP), to evaluate whether the materials would be characterized as a RCRA waste.

A summary of the analytical results for the samples are included in Table 1. 42 of the 79 discrete samples and four of ten composited samples contained lead concentrations exceeding both residential and industrial ESL's of 80 and 320 mg/kg, respectively. Of those samples, 20 exceeded the Total Threshold Limit Concentration (TTL) of 1,000 mg/kg. Selected samples where the metals concentration exceeded 10 times the STLC were analyzed for soluble lead. Seven of the 12 samples analyzed for soluble lead exceeded the STLC of 5 mg/l. Ten samples also were analyzed for TCLP lead as shown on Table 1. TCLP lead was not detected above 5 mg/l. Metal distributions are illustrated on Plate 3. Based on the aerial distribution of metals illustrated on Plate 3 it is apparent that approximately 95% of impacted materials exceed both the residential and industrial ESL.

No VOCs, SVOCs, or PCBs were detected above laboratory reporting limits in the composite samples analyzed. Only low-level concentrations of petroleum hydrocarbons were detected and they were less than residential and industrial ESLs.

The primary constituent of concern (COC) is lead based on the investigation results. The elevated lead concentrations occur exclusively within the debris materials, and lead has not

leached into the soils below the debris layer. Field observations indicate that the debris occurs typically at a depth of 2.5 feet below ground surface and is approximately two feet thick, although it varies in depth and thickness throughout the impacted area.

CKG also:

- Completed a geophysical survey to better define the limits of the debris;
- Completed a soil vapor investigation to assess the potential for landfill gas; and
- Collected a grab groundwater sample to assess the potential that groundwater was impacted with metals.

The results of those investigation are provided in the *Debris Layer Investigation Report*. Geophysics showed that the debris probably extends beneath the concrete stockpile and potentially beneath the road. The landfill gas survey did not detect landfill gas at the site, and no soluble metals were detected in the groundwater.

2.4 Extent of Soil Removal Requirements

Residential land use is desired for the property. As such, the average lead concentration in soil in the impacted areas must be less than the residential ESL of 80 mg/kg. The 95% upper confidence level (UCL) for average concentration will be calculated using the soil removal confirmation testing results from the bottom and sidewalls of the excavated areas to determine the residual average lead concentration following the waste removal activities. Because 95% of the material also exceeds industrial standards there is little difference between the level of effort to meet a residential cleanup goal versus an industrial cleanup goal.

A statistical analysis was performed to determine the current 95% UCL based on the defined lead distribution in soil, as shown in Plate 3 and calculated in Table 2. The 95% UCL was recalculated in anticipation that the soils with the highest lead concentrations were removed and replaced with relatively clean backfill soils. This analysis was repeated until the 95% UCL was less than 80 mg/kg. This determined the extent of soil removal requirements shown on Plates 3 and 4. This evaluation demonstrates that residual lead concentrations up to 250 mg/kg may be left in place, and the resulting 95% UCL for the impacted area will be less than 80 mg/kg.

The volume of debris layer soil to be removed is approximately 6,000 cubic yards based on the soil removal area shown on **Plate 3** and an anticipated depth of two feet across the area, as summarized below:

Total Area	80,000 ft ² (1.8 acres)
Total Volume	160,000 ft ³
Total Volume	6,000 yd ³
Total Tonnage (1.5x yd ³)	9,000 tons

3.0 EXCAVATION AND MATERIAL MANAGEMENT

This section identifies implementation activities to attain clean closure for lead impacted soils at the Site. The removal action consists of excavating impacted materials and disposing of them at a Class III landfill when constituent concentrations can be classified as non-hazardous, or Class I when constituent concentrations are classified as California hazardous. In accordance with CalRecycle LEA Guidance #16, this section presents the following steps needed to implement clean closure:

1. Project planning;
2. Site Preparation;
3. Excavation Plan;
4. Profiling and Disposal;
5. Backfill and Restoration Plan; and
6. Projected Schedule.

3.1 Project Planning

Project planning includes this document, health and safety planning, permitting, conducting bidding and contracting activities, locating buried utilities, and providing a land survey.

3.1.1 Health and Safety Plan

The proposed work under this Closure Plan will be conducted in accordance with the Site Specific Health and Safety Plan (HASP) included as **Appendix A**. Additionally, each subcontractor that may come into contact with impacted soils or groundwater will be required to prepare their own task specific health and safety plan. The HASP will be available to personnel during on-Site activities.

The primary health and safety issues are the physical risks associated with construction activities, such as slips, trips, falls, and equipment accidents. In addition, excavation of the debris layer has the potential to create air-borne dust from lead impacted materials. The HASP requires, and the future construction contracting documents will require, appropriate dust control measures.

3.1.2 Permits

Two permits have been identified for the proposed work: The United States Army Corps of Engineers (USACE) 404 permit for excavation in a wetlands area; and Sonoma County and/or City of Petaluma grading permit. The USACE 404 permit will likely be obtained under Nationwide Permit No. 38 – Cleanup of Hazardous and Toxic Waste. An application for a 401 Water Quality Certification will also be submitted to the RWQCB. CKG will obtain the necessary permits following acceptance of the Closure Plan and prior to field activities.

3.1.3 Bidding and Contracting Activities

The field requirements of this Closure Plan will be combined with contract documents to collect bids and contract for the construction services. It is anticipated that a unit price bid structure will be used for contracting purposes to allow competitive pricing for the Owners and to fairly compensate the selected contractor for uncertain quantities and likely soil volume changes to be encountered in the field.

3.1.4 Buried Utilities

A water pipeline was located near the north-west corner of the property while potholing exploration activities were underway. The extent of the water line into the property is unknown. No other active buried utilities are anticipated within the property boundaries, although remnant service conduits are likely to be encountered. No pre-design utility surveys have been conducted.

An independent buried utility locating service will survey the work areas to identify buried utilities as part of the design process and prior to completing the contract documents. Underground Service Alert (USA) will also be notified, although their scope of work does not include private property.

3.1.5 Site Land Survey

The designated excavation areas are shown on **Plate 4** with survey coordinates defining the corners of the excavation grid limits. Prior to beginning excavation activities, a licensed land surveyor will define the excavation limits in the field with appropriate off-set staking to allow reconstruction of the excavation limits by field inspectors. Where appropriate, marking paint will also be used to mark excavation grid locations.

3.2 Site Preparation

The Site is a vacant property with a short, paved driveway. The majority of the property is comprised of a pile of aggregate debris and unpaved dirt. The excavation contractor will be responsible for additional security measures that may be needed during construction. Other site preparation work includes erosion control, dust control, and clearing and grubbing.

3.2.1 Erosion Control

The general topography of the Site is relatively flat. Erosion will be controlled by maintaining downward grades in the work areas toward the center of the excavated areas. Based on the location of the excavation, it is expected that precipitation will infiltrate Site soils before leaving the property. CKG or the selected excavation contractor will be required to prepare a Storm

Water Pollution Prevention Plan (SWPPP) for approval prior to beginning the excavation activities.

As a minimum, fiber rolls and silt fences will be installed at the property boundaries in low lying areas where precipitation runoff is likely to occur. In addition, the first drain inlet collection locations will be protected with fabric barriers.

The excavation contractor will monitor upcoming weather conditions to avoid excavation activities during inclement weather. Stockpiles will be covered with anchored visqueen each night, during periods of non-use, and during rain events. Excavations will not be permitted under wet conditions immediately following a rain event.

3.2.2 Dust Control

A proposed truck travel route across the Site is shown on Plate 4. A decontamination section will be established near the Site exit location to remove loose soil and debris from truck tires. Dust control facilities will also be available at the Site exit. The decontamination pad will be constructed of 1.5-inch crushed rock, six inches thick, approximately 20 feet wide and 30 feet long. Equipment that comes in contact with impacted soils will be decontaminated by driving across the pad prior to leaving the Site.

The maximum lead concentration in the debris layer soil materials is 10,000 mg/Kg, which is equivalent to 1% lead in soil. The worker permissible exposure limit (PEL) for air borne lead is 0.03 milligrams per meter cubed (mg/m^3), and the residential exposure limit for children is 0.017 micrograms per kilogram ($\mu\text{g}/\text{m}^3$). Therefore, the allowable dust/particulate concentration in the work area breathing zone without personal protective equipment (PPE) is $3 \text{ mg}/\text{m}^3$ (0.03/1%). The Health and Safety Plan in Appendix A addresses appropriate PPE for worker protection when dust levels exceed $3 \text{ mg}/\text{m}^3$.

The excavation contractor is responsible for dust control and mitigation during removal activities to prevent spreading of objectionable air borne particulates from the excavating, stockpiling, loading, and transporting activities. Dust control measures will include, but are not limited to: using a water truck to spray sufficient water to control objectionable dust emissions, covering stockpiles, and covering excavated areas. Clean water for dust control will be obtained from nearby fire hydrant or other clean water source. The excavation contractor will be responsible for obtaining necessary approvals to use their selected water source.

Initial excavation and loading activities will be monitored by a Certified Industrial Hygienist (CIH) to verify that the dust control measures are effective and acceptable conditions are maintained for worker and off-site persons in accordance with the HASP. Air borne particulate concentrations will be field measured using a real-time dust monitor. The CIH will assess the need for personal protective equipment (PPE) and provide pertinent information to the contractor. Additional dust control measures or alternative excavation techniques will be the responsibility of the contractor should the initial dust control measures be ineffective. Site monitoring will be continued by the CIH until effective dust control measures are demonstrated.

Procedure inspections will be conducted by CKG following acceptance by the CIH.

3.2.3 Clearing and Grubbing (Clean Soil Removal)

Clearing and grubbing activities will remove approximately the top two feet of clean surface soil materials and associated grasses and small plants. Removing these soils will expose the visually distinguishable debris layer for removal. The surface soils are free from lead and other constituents of concern, and are considered non-hazardous. These materials will be stockpiled on Site and used as surface restoration material following the excavation activities.

3.3 Excavation Plan

The excavation plan describes the locations and volumes of lead impacted soils to be removed from the Site consistent with the volumes identified in Section 2. Although the excavation will be relatively shallow, the lead impacts are distributed across a substantial area and the removal costs are significant. As such, the excavation plan incorporates various treatment and disposal options that may be implemented as cost saving measures.

Excavation requirements and locations are shown on Plate 4. The elevated lead concentrations are confined to the debris layer, and the debris layer is easily recognized in the field by its slightly orange pigment and substantial pieces of broken glass and brick. The debris layer typically begins at an approximate depth of 2 feet below ground surface and varies in depth up to an approximate maximum of five feet below ground surface.

Plate 4 illustrates an excavation grid that provides definition to the necessary excavation areas. Each excavation grid section represents an area where one soil confirmation sample is required from the bottom of the excavation, as discussed in Section 3.4. The selected excavation contractor will present an excavation plan to define their order of excavation and traffic patterns.

The recently collected soil data will be acceptable to the landfills for profiling and disposal acceptance purposes. The TTLC limit for lead as a non-hazardous material is 1,000 mg/kg and the STLC limit for lead is 5 mg/L. In the southern portion of the impacted area, the debris layer materials have lead concentrations that are frequently less than 1,000 mg/kg, although they exceed the STLC limit. Based on the recent site data, the STLC limit is exceeded when the total lead concentration in soil is greater than approximately 250 mg/L. In the northern portion of the impacted area, the debris layer lead concentrations are significantly greater than 1,000 mg/kg.

Given the excavation requirements as described in Section 2.4 where the highest lead concentrations will be removed, it is expected that approximately 95 percent of the soils designated for off-site disposal will be classified as California hazardous materials (as illustrated on Plate 3). It may be advantageous to separate the finer material (approximately one-inch minus) from the larger debris, under the expectation that the larger debris does not contain lead or other contaminants. The TTLC and STLC concentrations will be reduced to acceptable levels by stabilizing the finer soil materials with cement, fly ash, or other binding materials.

Hazardous materials will be disposed of in the US Ecology Class I landfill in Beatty, Nevada. Disposal at Buttonwillow or Kettleman Class I landfills in California is also possible depending on their permitted ability to accept additional quantities of hazardous materials.

Treated soils in compliance with TTLC and STLC limits would be classified as non-hazardous and could be disposed of nearby at the Potrero Hills Class III landfill in Suisun, California. Soil stabilization pretreatment alternatives are being considered as cost savings measures. Bench-scale testing with Site materials will be conducted to verify the technical- and cost-effectiveness of soil treatment.

At least two and possibly three specialty remediation subcontractors will be retained to conduct bench-scale tests with debris layer materials. Objectives for the tests will be to evaluate treatment capability using various additives to create a stable soil matrix that contains contaminant concentrations, under laboratory test methods, that are less than the TTLC and STLC limits. The bench tests will also evaluate the need and benefits of on-site soil screening. From the bench-test results, each remediation subcontractor will provide a bid or quote to implement their soil stabilization remedy at the Site. Baywood, CKG, and the RWQCB will be able to review the acceptability of the proposed process in order to select the preferred approach for material disposal.

3.4 Soil Testing

Analytical testing of lead concentrations in soil will be required to verify that the excavations are complete, and the treated soils are acceptable for disposal purposes. Field and laboratory testing methods will be conducted throughout the project. An X-ray fluorescence (XRF) environmental analyzer will be used in accordance with EPA Method 6200 for the field tests. Laboratory samples will be sent to McCampbell Analytical in Pittsburg, California for lead testing using EPA Method 6020.

3.4.1 Excavation Confirmation

To confirm that the impacted soil has been removed to the extent practical, XRF tests will be performed at the soil surface along the sidewalls of the excavation and at the excavation bottom.

Once the visually impacted soils have been removed, the XRF reading will be used to determine whether the lead concentration is less than 250 mg/kg, as described in Section 2.4. In the event that an XRF reading is greater than 250 mg/kg, then the excavation contractor will remove additional materials until an acceptable reading is obtained.

Laboratory confirmation tests will also be performed. One soil sample will be collected for every 50 feet of excavation sidewalls and one sample will be collected at the excavation bottom for every 5,000 square feet of area. An initial estimate of the number of samples is shown on Plate 4 using an anticipated excavation grid. Each soil sample will be tested for lead to verify that the excavation is complete.

3.4.2 Disposal Profiling

The Class I landfills will accept the investigation data and laboratory reports for disposal of the debris layer materials as a hazardous waste. Verification samples will be required for treated soils to be disposed of as non-hazardous material in a Class III landfill. Composite samples will be collected and tested using EPA Method 6020 based on the following table:

Verification Sampling Requirements

Project Size (yd ³)	Cubic Yards per 4:1 Composite Sample
0-2,499	250
2,500-4,999	375
5,000-7,499	500
7,500-10,000	750
>10,000	1000

The Site has an estimated 6,000 cubic yards of impacted material. Depending on the soil stabilization additives, the total volume will increase slightly. Estimating 7,000 cubic yards of total material, one composite sample will be required for every 500 cubic yards of treated material and a total of 14 composite samples will be collected and analyzed by laboratory methods for total lead and soluble lead to verify compliance with the TTLC and STLC limits.

Any screened and untreated materials will also be tested in a similar manner. In addition, the XRF may be used on a routine basis to verify soil treatment performance, but will not be used to satisfy the landfill soil profiling requirements.

3.5 Backfill and Restoration Plan

Backfilling can begin after confirmation testing indicates that an excavation grid area is complete. Any screened material designated as non-hazardous will be used as backfill material. Imported fill materials will also be used to backfill the excavated areas to within two feet of the original grade. The soil stockpiled on site in the vicinity of the former underground fuel storage tank excavation was thoroughly sampled and analyzed for petroleum hydrocarbon constituents, volatile organic constituents, metals, polychlorinated biphenyls and pesticides by AEI. This soil is also suitable to be used to backfill the excavation. The backfilled areas will be compacted in one-foot maximum lifts to 95% relative density. A geotechnical engineer will perform field compaction tests to verify the placement and compaction methods. At least one compaction test per excavation grid will be performed for each lift.

Surface restoration is needed to stabilize surface soils, prevent erosion, and provide cost-effective and aesthetically pleasing landscape. It is anticipated that future property development will undo the surface landscape, and therefore, the degree of surface restoration will be minimized.

The ground surface will be graded smooth and should not pose an unreasonable hazard to future developers or trespassers at the Site. Surface grades will match existing to the extent practical with overland flow runoff graded southward toward the existing wetlands. A grass seed mixture will be applied by hydroseeding the work areas.

3.6 Project Schedule

Following acceptance of this Clean Closure Plan, approximately two months will be required to conduct bench scale soil treatment tests. These tests will determine whether the material can be cost-effectively treated to create a non-hazardous material. Following these results, approximately two months will be required to develop remediation contract documents, collect bids, and execute contracts.

Permitting efforts will be conducted concurrently with the bench tests and contracting activities. The COE 404 permit will likely determine when field activities may begin. The City of Petaluma grading permit will be obtained after the COE 404 permit is in place.

The excavation, soil treatment, and disposal field activities will require approximately two to three months to complete. The field activities will be affected by weather, dust control and other site issues, and soil treatment production rates. The construction closeout report will be provided two months following completion of the field activities.

The entire clean closure process is estimated to require from 6-8 months to complete.

4.0 CONFIRMATION AND DOCUMENTATION OF MATERIAL REMOVAL AND DISPOSAL

The following documentation will be developed during the clean closure activities:

- Documentation of soil removal;
- Verification of final disposition of soil materials; and
- Documentation of field sampling.

Field activities will be noted in daily activity logs, including a description of the activities, equipment used, soils excavated, soils treated, soils removed from the Site, samples taken, XRF results, and personnel and visitors on site. Pictures will also be taken during various stages of the excavation. Disposal manifests will be generated to verify and document the final disposition of waste materials. Weight tickets will also be obtained from the landfills to document quantities.

After clean closure activities are complete, a closeout report will be prepared. The closure report will include a narrative summary of the project activities, field documentation, laboratory reports, disposal manifests, landfill weight tickets, and project photographs. No post closure monitoring, maintenance, or land use restrictions will be required.

TABLES

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead	
Previous Investigation Data																					
PA-3	6/18/14	22							280	930								2000			
CS PA-3	2/12/15	18							270	1800								4300			
CS PA-3N	2/12/15	20							810	1400								3400			
CS PA-3SW	2/12/15	24							1300	2800								3900			
CS PA-3SE	2/12/15	25							670	1500								3600			
Data Collected During Potholing Investigation																					
PH1-1'	4/28/15	<0.5	1.9	170	0.56	<0.25	34	7.9	18	6.40	0.17	<0.5	40	<0.5	<0.5	<0.5	30	31			
PH1-2.5'	4/28/15	2.6	6.7	180	<0.5	1.7	45	14	49	250	0.19	0.74	38	<0.5	<0.5	<0.5	32	620	2.8	<0.2	
PH1-4'	4/28/15	<0.5	4.0	310	0.92	0.28	62	9.4	33	20	0.10	0.69	44	<0.5	<0.5	<0.5	57	81			
PH1-5'	4/28/15	<0.5	6.9	180	0.62	<0.25	34	7.1	24	16	<0.05	0.54	29	<0.5	<0.5	<0.5	33	58			
PH2-2.5"	4/28/15									1300										<0.2	
PH3-1.5'	4/28/15	<0.5	2.8	100	<0.5	<0.25	34	10	15	6.6	0.098	<0.5	37	<0.5	<0.5	<0.5	30	29			
PH3-3'	4/28/15	3.9	15	270	<0.5	2.1	65	13	170	520	0.63	3.3	78	<0.5	<0.5	<0.5	45	690	18		
PH3-4'	4/28/15	<0.5	1.8	38	0.52	<0.25	40	6.7	28	9.2	0.13	0.6	37	<0.5	<0.5	<0.5	29	54			
PH4-1'	4/28/15	<0.5	1.8	190	0.58	<0.25	32	7.2	18	6.3	0.15	<0.5	335	<0.5	<0.5	<0.5	26	29	1.7 Ni		
PH4-2.5'	4/28/15	0.65	6.6	160	0.58	0.27	41	14	32	50	0.12	0.63	44	<0.5	<0.5	<0.5	36	200			
PH4-4'	4/28/15	2.5	6.5	180	0.58	0.86	53	13	94	240	0.36	0.67	50	<0.5	<0.5	<0.5	46	1100	4.8		
PH4-5'	4/28/15	<0.5	9.8	150	0.84	<0.25	40	11	22	8.7	0.062	0.53	44	<0.5	<0.5	<0.5	52	36			
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600			
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600			
TTLIC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000		
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5		

mg/kg: milligrams per kilogram

	Highlighted data exceeds the ESL
	Highlighted data exceeds the industrial/commercial ESL
	Highlighted data exceeds the STLC or TTLIC

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH5-2'	4/28/15	50	7.4	320	<0.25	2.4	54	11	210	1900	0.42	0.7	58	<0.5	0.69	<0.5	39	1300	110	0.77
PH5-4'	4/28/15	1.8	2.4	220	0.88	0.54	48	12	41	43	0.28	<0.5	55	<0.5	<0.5	<0.5	38	160		
PH5-5'	4/28/15	<0.5	3.2	140	0.63	<0.25	38	7.1	18	7.8	<0.05	<0.5	36	<0.5	<0.5	<0.5	43	25		
PH6-1'	4/28/15	<0.5	3.7	140	0.69	<0.25	43	12	24	13	0.14	<0.5	41	<0.5	<0.5	<0.5	39	44		
PH6-2.5'	4/28/15	1.9	4.4	160	0.56	0.83	54	15	55	120	0.14	<0.5	65	<0.5	<0.5	<0.5	37	330	3.0	
PH6-3.5	4/28/15	<0.5	4.7	110	0.84	0.32	53	9.6	34	10	0.19	0.83	55	<0.5	<0.5	<0.5	45	72		
PH6-4.5'	4/28/15	<0.5	6.5	170	0.64	<0.25	34	25	19	10	<0.05	0.54	37	<0.5	<0.5	<0.5	35	27		
PH7-2'	4/28/15	0.56	3.6	190	0.55	<0.25	64	18	29	14	0.094	<0.5	77	<0.5	<0.5	<0.5	46	53		
PH7-3'	4/28/15	<0.5	2.6	140	0.67	<0.25	40	18	23	11	0.11	<0.5	50	<0.5	<0.5	<0.5	39	41		
PH7-4'	4/28/15	<0.5	5.9	100	0.51	<0.25	38	5.1	21	5.7	0.081	2.3	26	<0.5	<0.5	<0.5	38	37		
PH8-2'	4/28/15	<0.5	3.3	180	0.67	<0.25	43	13	22	9.9	0.14	<0.5	46	<0.5	<0.5	<0.5	37	37		
PH8-4'	4/28/15	<0.5	4.7	66	0.5	<0.25	44	9.1	25	19	0.19	<0.5	43	<0.5	<0.5	<0.5	39	78		
PH9-2'	4/28/15	<0.5	2.1	110	0.57	<0.25	35	8.8	17	6.8	0.088	<0.5	35	<0.5	<0.5	<0.5	28	28		
PH9-4'	4/28/15	1.2	7.9	160	0.7	0.44	73	12	56	59	0.41	0.97	68	<0.5	<0.5	<0.5	60	220		
PH10-2'	4/28/15	0.72	7.0	250	0.8	0.43	54	17	38	38	0.18	0.66	65	<0.5	<0.5	<0.5	53	210		
PH10-4'	4/28/15	1.2	6.8	220	0.66	0.85	64	11	78	66	0.27	0.88	78	<0.5	<0.5	<0.5	55	260		
PH11-1'	4/28/15	<0.5	3.1	210	0.79	<0.25	53	8.7	26	11	0.16	<0.5	47	<0.5	<0.5	<0.5	45	44		
PH11-2.5'	4/28/15	3.5	13	250	0.67	3.5	63	16	140	500	0.94	1.6	70	<0.5	0.51	<0.5	53	1400	41	<0.2
PH11-4'	4/28/15	<0.5	8.9	180	0.65	0.49	78	13	44	24	0.51	0.64	77	<0.5	<0.5	<0.5	61	160		
PH11-5'	4/28/15	<0.5	14	67	0.62	0.32	46	6.9	44	12	0.15	1.9	35	0.57	<0.5	<0.5	49	57		
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLc		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

- Highlighted data exceeds the ESL
- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLc

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH12-1'	4/28/15	<0.5	3.1	290	<1.0	<0.25	52	9.5	25	7.6	0.24	<0.5	52	<0.5	<0.5	<0.5	46	40		
PH12-2.5'	4/28/15	2.3	11	240	<1.0	2.3	57	16	89	290	0.42	1.0	60	<0.5	<0.5	<0.5	46	810	10	<0.2
PH12-3.5'	4/28/15	0.8	4.3	87	<1	1	49	9.2	77	85	0.38	<0.5	50	<0.5	<0.5	<0.5	36	350		
PH12-4.5'	4/28/15	<0.5	2.5	140	<1.0	0.78	25	4.2	30	6.4	0.078	1.0	36	0.7	<0.5	<0.5	31	62		
PH13-2'	4/28/15	<0.5	4.0	110	<1.0	<0.25	32	115	16	14	0.10	0.76	45	<0.5	<0.5	<0.5	33	44		
PH13-4'	4/28/15	<0.5	6.4	160	<1.0	<0.25	31	12	14	5.9	0.056	<0.5	33	<0.5	<0.5	<0.5	45	29		
PH14-1'	4/28/15	0.78	3.5	120	<1.0	2.7	58	14	31	40	0.21	<0.5	53	<0.5	<0.5	<0.5	62	95		
PH14-2.5'	4/28/15	0.62	3.5	180	<0.5	<0.25	50	15	26	21	0.18	<0.5	48	<0.5	<0.5	<0.5	51	80		
PH14-4'	4/28/15	3.8	8.2	160	<1.0	2.3	58	15	92	390	0.45	1.5	64	<0.5	<0.5	<0.5	62	840	15	0.87
PH14-5'	4/28/15	<0.5	8.1	210	<1.0	<0.25	41	44	17	8.9	0.051	0.93	44	<0.5	<0.5	<0.5	59	33		
PH15-2'	4/28/15	<0.5	6.9	160	<1.0	<0.25	53	14	22	54	0.19	<0.5	59	<0.5	<0.5	<0.5	45	77		
PH15-4'	4/28/15	<0.5	8.5	180	<1.0	<0.25	43	24	27	27	0.18	1.4	53	<0.5	<0.5	<0.5	55	210		
PH15-5'	4/28/15	<0.5	9.8	160	<1.0	<0.25	48	12	20	7.4	0.065	<0.5	38	<0.5	<0.5	<0.5	67	35		
PH16-1'	4/28/15	3.3	48	250	<1.0	0.8	60	19	130	300	0.29	1.7	59	<0.5	<0.5	<0.5	59	490		
PH16-2.5'	4/28/15	5.3	6.4	240	<0.5	1.9	54	13	130	400	0.20	0.56	56	<0.5	<0.5	<0.5	44	960	27	<0.2
PH16-4'	4/28/15	3.5	5.5	240	0.59	0.83	50	12	76	160	0.46	<0.5	49	<0.5	<0.5	<0.5	53	480		
PH16-5'	4/28/15	<0.5	8.0	310	0.66	<0.25	40	36	19	9.9	0.050	0.56	42	<0.5	<0.5	<0.5	54	30		
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLIC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

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- Highlighted data exceeds the STLC or TTLIC

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH17-1'	4/28/15	0.70	3.9	160	<0.5	<0.25	79	13	29	7.8	0.059	<0.5	75	<0.5	<0.5	<0.5	51	45		
PH17-2.5'	4/28/15	0.56	3.2	270	0.75	0.66	55	12	30	40	0.25	<0.5	66	<0.5	<0.5	<0.5	42	170		
PH17-4'	4/28/15	0.89	6.4	160	0.73	1.3	59	14	63	23	0.24	1.3	59	<0.5	<0.5	<0.5	63	470		
PH17-5'	4/28/15	<0.5	4.7	110	0.71	<0.25	43	5.6	13	7.9	<0.05	0.71	28	<0.5	<0.5	<0.5	47	30		
PH18-1'	4/28/15	2.3	9.6	440	0.53	<0.25	47	16	52	99	0.12	1.1	57	<0.5	<0.5	<0.5	63	92		
PH20-2.5'	10/5/15									27										
PH21-2.25'	10/5/15									900										
PH22-2'	10/5/15									420										
PH23-2'	10/5/15									1900										
PH24-3'	10/5/15									430										
PH25-2'	10/5/15									710										
PH26-2'	10/5/15									520										
PH27-2.5'	10/5/15									5000										4.8
PH28-3'	10/5/15									920										
PH29-1.5'	10/5/15									1000										
PH30-3'	10/5/15									10000										<0.2
PH31-3'	10/5/15									5400										<0.2
PH32-3.5'	10/5/15									1900										
PH33-3.5'	10/5/15									4700										
PH34-3'	10/5/15									4600										
PH35-3'	10/5/15									2300										
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

	Highlighted data exceeds the ESL
	Highlighted data exceeds the industrial/commercial ESL
	Highlighted data exceeds the STLC or TTLC

TABLE 1
Concentration of Metals in Soil Samples
2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead	
PH36-2'	10/5/15									1200											
PH37-2.5'	10/5/15									1300											
PH38-3'	10/5/15									4300											
PH39-1.5'	10/5/15									2100											
PH1,6,11,17-1' comp	4/28/15		7.5	180		1.6	45			250	0.17			<0.5	<0.5					<0.2	
PH1,6,11,17-2.5' comp	4/28/15		6.6	180		<0.25	35			17	<0.05			<0.5	<0.5						
PH1,11,17,4' PH6-3.5' comp	4/28/15		3.3	110		<0.25	40			7.5	0.12			<0.5	<0.5						
PH3-3', 18-3', 12-2.5' comp										180											
PH1,11,17,5' PH6-4.5' comp	4/28/15		7.4	140		<0.25	43			8.1	0.054			<0.5	<0.5						
PH2,4,14,16-1' comp	4/28/15		3.9	240		0.05	67			22	0.23			<0.5	<0.5						
PH4,14,16-2' PH2-2.5' comp	4/28/15		6.2	150		1.1	45			270	0.21			<0.5	<0.5						12.00
PH2,4,14,16-4' comp	4/28/15		1.8	42		0.28	41			10	0.16			<0.5	<0.5						
PH2,4,14,16-5' comp	4/28/15		5.3	130		<0.25	37			8.4	0.079			<0.5	<0.5						
Ph23, 30, 32, 34 comp	10/5/15		33	3200		6.60	58.00			2100.00	0.67			<0.5	2.20						
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600			
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600			
TTLC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000		
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5		

mg/kg: milligrams per kilogram

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- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLC

Table 2
95% UCL Calculation
Lead Concentrations in Soils
2592 Lakeville Highway, Petaluma, California

Sample Location - Sample Depth (ft)	Field Results (mg/kg)	Post Removal (mg/kg)
PH1-2.5	250	250
PH2-2.5	1300	10
PH3-3	520	10
PA-3	1800	10
PH4-4	240	240
PH5-2	1900	10
PH6-2.5	120	120
PH7-3	11	11
PH8-4	19	19
PH9-4	59	59
PH10-4	66	66
PH11-2.5	500	10
PH12-2.5	290	10
PH13-2	14	14
PH14-4	390	10
PH15-2	54	50
PH16-2.5	400	10
PH17-2.5	40	40
PH18-1	99	99
PH20-2.5'	27	27
PH21-2.25'	900	10
PH22-2'	420	10
PH23-2'	1900	10
PH24-3'	430	10
PH25-2'	710	10
PH26-2'	520	10
PH27-2.5'	5000	10
PH28-3'	920	10
PH29-1.5'	1000	10
PH30.3'	10000	10
PH31-3'	5400	10
PH32-3.5'	1900	10
PH33-3.5'	4700	10
PH34-3'	4600	10
PH35-3'	2300	10
PH36-2'	1200	10
PH37-2.5'	1300	10
PH38-3'	4300	10
PH39-1.5'	2100	10
arithmetic mean	1479.462	32.436
standard deviation	2077.406	56.034
CV = SD / mean	1.404	1.728
count (r)	39	39
alpha (95% = 0.05)	0.05	0.05
t(alpha, df=r-1)	1.69	1.69
Student's t UCL	2040.30	47.56
Chebychev UCL	2929.45	71.55

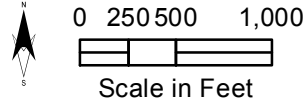
PLATES



Drawn by P. Dellavalle February 2015. Base layers are aeriels provided by ArcGIS Online.

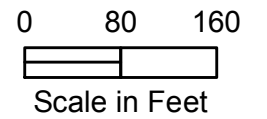


- Explanation**
- Site Boundary
 - Railroad
 - Parcels





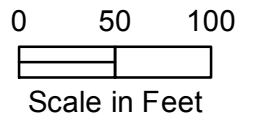
- Explanation**
- Previous Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Excavation Area
 - Site Boundary

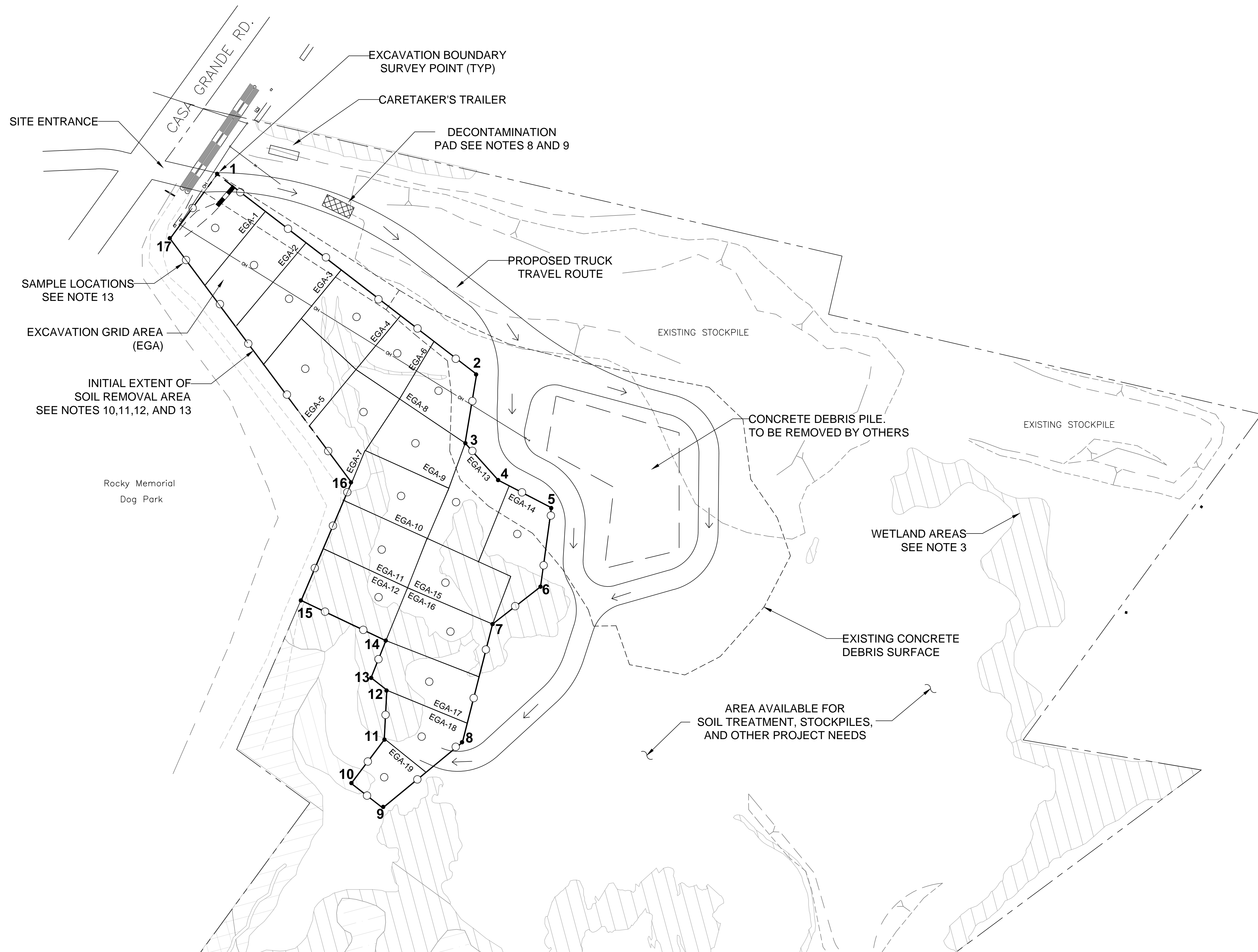




Explanation

- Sample Location
- Pot Hole Location October 2015
- Pot Hole Location April 2015
- ▲ Pot Hole Location (No Visible Debris)
- ▨ Pb Concentrations > TTLC or STLC
Dashed where covered by overburden
- ▩ Metal Concentration > Res. ESL
- Pb Concentration < 80 ppm
- Historic Building Footprints
- Site Boundary





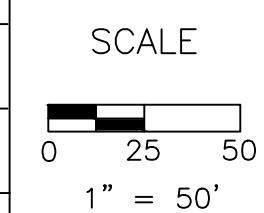
GENERAL NOTES:

1. BASE MAP PROVIDED BY STEVEN J. LAFRANCHI & ASSOCIATES, INC., DATED 10/7/2015.
2. A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PROVIDED PRIOR TO BEGINNING WORK.
3. PROTECT WETLAND AREAS OUTSIDE OF THE EXTENT OF SOIL REMOVAL AREAS. THE CONTRACTOR SHALL PLACE A BARRIER, SUCH AS SILT FENCES, ALONG DESIGNATED WETLAND BOUNDARIES.
4. CONTRACTOR SHALL PROVIDE WORK SCHEDULE AND PROJECT-SPECIFIC HEALTH AND SAFETY PLAN AT THE PRE-CONSTRUCTION MEETING.
5. LIMIT TRUCK HAULING OPERATIONS ON LAKEVILLE HIGHWAY TO WEEKDAYS BETWEEN 7A.M TO 4:30 P.M.
6. LOCATE SUBSURFACE UTILITIES PRIOR TO BEGINNING EXCAVATION ACTIVITIES.
7. GRADING AREAS AND TEMPORARY TRUCK HAULING ROUTES SHALL BE WATERED TO CONTROL DUST.
8. HAULING TRUCKS SHALL BE DECONTAMINATED ON DECONTAMINATION PAD PRIOR TO LEAVING THE SITE.
9. DECONTAMINATION PAD SHALL BE CONSTRUCTED OF 1.5-INCH DIAMETER CRUSHED ROCK, 6 INCHES THICK, APPROXIMATELY 20 FEET WIDE AND 30 FEET LONG.
10. REMOVE EXISTING ONE TO TWO FEET OF NON-HAZARDOUS COVER MATERIAL AND STOCKPILE ON SITE.
11. EXCAVATE, TREAT, AND REMOVE VISUALLY IDENTIFIABLE LEAD CONTAMINATED DEBRIS LAYER MATERIALS LOCATED APPROXIMATELY TWO TO FOUR FEET BELOW GRADE.
12. CKG WILL PERFORM XRF MEASUREMENTS OF LEAD CONTENT AT EXCAVATION SIDEWALLS AND BOTTOM. EXCAVATIONS SHALL CONTINUE TO THE EXTENT NECESSARY SUCH THAT XRF READINGS ARE LESS THAN 250 MG/KG LEAD.
13. CKG WILL SAMPLE EXCAVATION SIDEWALLS AND BOTTOM FOR LABORATORY TESTING AND CONFIRMATION THAT THE EXTENT OF IMPACTED SOILS HAVE BEEN REMOVED. ONE SAMPLE WILL BE COLLECTED FOR EVERY 50 FEET OF EXCAVATION SIDEWALL AND ONE SAMPLE WILL BE COLLECTED FROM THE EXCAVATION BOTTOM FOR EVERY 5,000 SQUARE FEET (I.E. ONE BOTTOM SAMPLE PER EGA).
14. NON-IMPACTED SOIL AND IMPORTED FILL MATERIAL SHALL BE USED TO BACKFILL EXCAVATED AREAS TO WITHIN 2 FEET OF ORIGINAL GRADE. BACKFILLED AREAS WILL BE COMPACTED IN 1-FOOT MAXIMUM LIFTS TO 95% DENSITY. A GEOTECHNICAL ENGINEER WILL PERFORM FIELD COMPACTION TESTS TO VERIFY THE PLACEMENT AND COMPACTION METHODS.
15. USE STOCKPILED SURFACE MATERIALS AS FINAL BACKFILL MATERIAL. SEE NOTE 10.
16. RESTORE SURFACE BY HYDROSEEDING WITH NATIVE GRASSES AND VEGETATION SEED MIXTURE.

EXCAVATION BOUNDARY SURVEY POINTS

Survey Pt.	Northing	Easting
1	5197.68	10998.74
2	4997.06	11258.93
3	4928.03	11247.35
4	4890.78	11280.70
5	4863.11	11333.95
6	4783.86	11323.05
7	4746.42	11274.91
8	4627.68	11244.62
9	4562.02	11164.78
10	4586.60	11133.22
11	4630.97	11166.94
12	4680.30	11168.86
13	4692.61	11153.10
14	4729.77	11167.90
15	4770.14	111083.01
16	4888.51	11133.45
17	5133.11	10951.51

DRAWN: YK/MH
 ENGINEER: JB
 CHECKED: JB
 DATE: 12/03/2015



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TITLE:
DEBRIS AREA EXCAVATION PLAN
2592 LAKEVILLE HWY
PETALUMA, CA

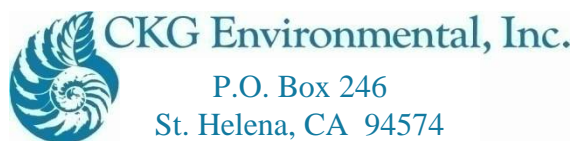
PLATE:

4

No.	DATE	REVISIONS	BY	CHK

**DEBRIS LAYER
INVESTIGATION REPORT**

**2592 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA**



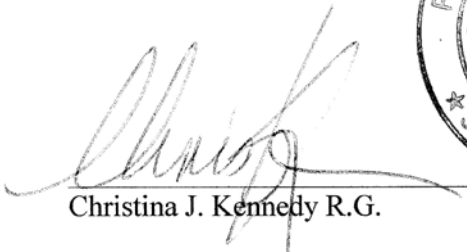
A Report Prepared for:

Mr. Keith Roberson
California Regional Water Quality Control Board – San Francisco Bay Region
1515 Clay Street
Oakland, CA 94612

**DEBRIS LAYER INVESTIGATION REPORT
2592 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA**

November 24, 2015

Prepared by:



Christina J. Kennedy R.G.



Principal

CKG Environmental, Inc.
P.O. Box 246
St. Helena, California 94574
(707) 967-8080

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Table 2 Petroleum Hydrocarbon Concentrations in Soil Samples

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Plate 2 Site Plan and Former Sample Locations

Plate 3 Site Investigation Area Overlain on 1953 Aerial Photograph

Plate 4 Site Investigation Area Overlain on 1965 Aerial Photograph

Plate 5 Pothole Locations and Residual Lead Map

APPENDICES

Appendix A Geophysical Investigation Report –
Norcal Geophysical Consultants, Inc. October 6, 2015

Appendix B Limited Soil Gas Investigation Report – Ninyo & Moore, October 13, 2015

Appendix C Analytical Laboratory Reports

Appendix D ProUCL Statistical Analyses for Lead and Cobalt

1.0 EXECUTIVE SUMMARY

The site, located at 2592 Lakeville Highway, Petaluma, California, has been the subject of subsurface explorations and soil remediation in the vicinity of the former underground fuel storage tanks. The fuel cleanup was regulated by the County of Sonoma Department of Health Services, Environmental Health Division (SCEHD) and received regulatory closure on July 30, 2004. A subsequent investigation in 2014 by a prospective property buyer, uncovered potential concerns in the vicinity of former wastewater ponds operated at the site. Elevated concentrations of petroleum hydrocarbons and metals were discovered in soil at one location at a depth of approximately 2.5 feet below ground surface. In April 2015, CKG Environmental, Inc., on behalf of the property owner, Baywood LLC completed a shallow subsurface investigations to assess the extent of the impact. Based on the initial investigation, CKG discovered burned landfill debris thought to be associated with a closed landfill at an adjacent property. Initial soil sampling indicated that the debris was impacted by lead at levels characteristic of a California Hazardous Waste.

Baywood LLC then contacted the County of Sonoma Local Enforcement Agency (LEA), who entered the site into the State of California Solid Waste Information System (SWIS) and then contacted Calrecycle (California Department of Resources Recycling and Recovery) and referred Baywood to the State of California Regional Water Quality Control Board, San Francisco Bay Region, (RWQCB). The RWQCB is the lead agency for this investigation. In accordance with guidance on investigations for abandoned landfills prepared by Calrecycle, Baywood completed investigations to assess the following:

- Assess the extent of the debris (using geophysics)
- Evaluate the potential for landfill gas
- Collect additional soil data to better delineate the lead distribution in the fill
- Evaluate the potential for groundwater impact from lead.

CKG contracted with Norcal Geophysical in September 2015 to evaluate the distribution of debris at the site. Norcal utilized a total of four geophysical methods to evaluate the area. The

extent of debris material was well delineated except in a small area that is presently covered with a stockpile of crushed concrete, and potentially beneath the driveway that enters the site. Metal debris within the concrete including rebar made it difficult to distinguish landfill debris from the concrete.

CKG contracted with Ninyo & Moore in September 2015 to install soil vapor probes and collect soil vapor samples to evaluate the soil gas. Probes were installed within the debris area and outside the known debris area. Soil vapor samples did not contain evidence of landfill gas related compounds. There were some volatile constituents detected that are consistent with gasoline which is not surprising given the former presence of underground gasoline tanks at the site and an associated release of gasoline to the subsurface.

Soil samples were collected within and adjacent to the debris area in two separate investigations. The first investigation occurred in April 2015 and included 18 potholes located in the southern part of the debris area. Soil sampling from debris and from soil above and below the debris layer demonstrated that the only constituent of concern is lead, which occurs exclusively in the debris layer. Lead does not occur immediately below the debris or above it. Composite samples analyzed for other potential constituents of concern (petroleum hydrocarbons, volatile organic constituents, Semivolatile organics, polychlorinated biphenyls, and other metals) indicate that only motor oil range petroleum hydrocarbons were detected in one isolated location at concentrations slightly above residential screening levels.

A second investigation was completed in October 2015. Another 20 potholes were excavated and sampled to confirm the presence and distribution of debris and lead impacts. A groundwater sample also was collected from a pothole located within debris layer at the downgradient (south) end of the debris area. No lead was detected in the groundwater sample.

The two potholing investigations have delineated the vertical and lateral extents of lead impacted debris at the site. California hazardous concentrations of lead occur in an area that parallels the western property boundary and extends north to the present driveway and east to a former drainage ditch. The northern extent of the fill underneath the concrete stockpile and driveway is

uncertain however historical aerial photographs show that there were a number of buildings in the vicinity that may have limited the area available for the debris.

Lead concentrations in the debris material exceed the residential and industrial State of California Regional Water Quality Control Board, San Francisco Bay Region Environmental Screening Levels (ESLs) and the California Code of Regulations Title 22 Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC). Materials that exceed the STLC or TTLC are considered California Hazardous Waste for the purposes of disposal.

In addition to lead, cobalt, nickel and zinc were detected in isolated area at concentrations that also exceeded the residential ESL. These metals exceedances coincide with the lead impacts except in the vicinity of one sample location (PH13).

CKG completed a statistical analysis of the lead and cobalt data utilizing the EPA's ProUCL calculator. Based on a 95% upper confidence limit (UCL), the statistical evaluation demonstrates that removing material with a lead concentration of 250 mg/kg or greater will result in the site meeting the residential ESL of 80 mg/kg. The same analysis for cobalt demonstrates that the current 95% UCL average cobalt concentration is less than the residential ESL of 23 mg/kg without removing any soil. Although nickel and zinc exceed the residential ESL in a few locations they are collocated with the elevated lead.

Based on the results of this sampling approximately 8,593 tons of California Hazardous Waste exists at the Site. Although there are some uncertainties in the exact volumes of affected material (specifically underneath the stockpile and driveway) there is sufficient information to plan and implement a clean closure remediation to allow residential redevelopment of the property.

CKG recommends that Baywood LLC submit this report to the RWQCB. CKG will prepare a clean closure plan also to be submitted to the RWQCB for review and concurrence before proceeding.

2.0 INTRODUCTION

The following report presents the results and conclusions of a number of investigative efforts to prepare this landfill investigation report for 2592 Lakeville Highway, Petaluma, California, conducted by CKG Environmental, Inc.

The site, located at 2592 Lakeville Highway, Petaluma, California, has been the subject of subsurface explorations and soil remediation in the vicinity of the former underground fuel storage tanks. The fuel cleanup was regulated by the County of Sonoma Department of Health Services, Environmental Health Division (SCEHD) and received regulatory closure on July 30, 2004. A subsequent investigation in 2014 by a prospective property buyer, uncovered potential concerns in the vicinity of former wastewater ponds operated at the site. Elevated concentrations of petroleum hydrocarbons and metals were discovered in soil at one location at a depth of approximately 2.5 feet below ground surface. In April 2015, CKG Environmental, Inc., on behalf of the property owner, Baywood LLC completed a shallow subsurface investigations to assess the extent of the impact. Based on the initial investigation, CKG discovered burned landfill debris thought to be associated with a closed landfill at an adjacent property. Initial soil sampling indicated that the debris was impacted by lead at levels characteristic of a California Hazardous Waste.

Baywood LLC then contacted the County of Sonoma Local Enforcement Agency (LEA), who entered the site into the State of California Solid Waste Information System (SWIS) and then contacted Calrecycle (California Department of Resources Recycling and Recovery) and referred Baywood to the State of California Regional Water Quality Control Board, San Francisco Bay Region, (RWQCB). The RWQCB is the lead agency for this investigation. In accordance with guidance on investigations for abandoned landfills prepared by Calrecycle, Baywood completed investigations to assess the following:

- Assess the extent of the debris (using geophysics)
- Evaluate the potential for landfill gas
- Collect additional soil data to better delineate the lead distribution in the fill
- Evaluate the potential for groundwater impact from lead.

2.1 SITE DESCRIPTION

The subject site (Site) consists of vacant land located to the south of Lakeville Highway and southeast of Casa Grande Road in a mixed commercial and residential area of Petaluma, California (Plate 1). The Site is approximately 13 acres in size and is surrounded by a barbed-wire security fence (Plate 2).

2.2 BACKGROUND

The Site has been the subject of several subsurface explorations and remediation due to the former presence of underground fuel storage tanks. Soil remediation activities were performed to address gasoline-range hydrocarbons present in soil to a depth of 5 feet below grade level (bgl) (Plate 2). The former owner, Darling Delaware (Darling) conducted the soil remediation in accordance with the approved Soil Remediation Work Plan for the Site prepared by MFG (MFG, 2000).

Implementation of the Soil Remediation Work Plan began in November 2000 and was completed in August 2002. Between November 2000 and June 2001, approximately 2,390 cubic yards of gasoline impacted soil were removed from the area of the former gasoline UST excavations. The excavated soil was treated by enhanced bioremediation in on-site stockpiles. After the soil had been successfully treated, it was placed and compacted back into the excavation. Final confirmation samples from each stockpile section demonstrated that the soil reused at the Site did not contain detectable Total Petroleum Hydrocarbons as gasoline (TPHg), at a reporting limit of 1.0 mg/kg. Similarly, benzene, toluene, ethylbenzene, or xylenes (BTEX) compounds were not detected at concentrations greater than 0.0075 mg/kg.

Confirmation soil sample data from excavation sidewalls and floor demonstrated that the TPHg and BTEX remaining in the soil at the Site did not exceed Risk Based Screening Levels (RBSLs), which were selected as the cleanup goals for the Site. The fuel release was regulated by the County of Sonoma Department of Health Services, Environmental Health Division (SCEHD) and received regulatory closure on July 30, 2004.

In 2014, AEI Consultants of Walnut Creek, California, on behalf of DeNova Homes conducted a Phase II subsurface investigation of potential concerns associated with former wastewater ponds operated at the site (AEI Consultants, 2014). Of six samples collected in former pond areas only one sample, PA-3, contained elevated concentrations of analytes as follows:

Analyte (mg/kg)	PA-3 6/18/2014
TPH mo	660
Antimony	22
Copper	280
Lead	930
Zinc	2000

AEI sample locations are shown on Plate 2. PA-3 was collected at a depth of 2.5 feet (ft.) bgl and appeared to be below sediments deposited in the former pond. Further, the boring log for PA-3 described debris such as brick and glass fragments in the sample, suggesting that some kind of debris may have been placed on the Site property.

To assess whether PA-3 was an isolated anomaly or was the result of a more widespread impact, CKG collected four soil samples with an excavator on February 12, 2015. One sample was collected at the original location of PA-3. The three other samples were collected 10 feet away from PA-3 to the north, southeast, and southwest. The samples were collected from soil excavated from a depth of 2.5 (ft. bgl), and analyzed for antimony, copper, lead, zinc, and TPH quantified as motor oil (TPHmo).

TPHmo and the metals antimony, copper, lead, and zinc were detected in all of the soil samples except one in concentrations at or exceeding the ESLs for residential use, (Table 1)

Based on these sampling results, it is apparent that elevated metals and TPHmo in the vicinity of PA-3 were not just anomalous or limited. In addition, debris was noted in the samples collected.

CKG then evaluated the location and extent of potential past debris disposal by reviewing historical aerial photographs provided by Environmental Data Resources, Inc. (EDR). The aerial

photographs were from various years from 1942 through 2012. Based on the aerial photography it appears that the Casa Grande Landfill was operated on the property west of the Site from possibly before 1942. The landfill stopped accepting wastes in 1991 and was officially closed in 1994. During the early 1940s and 1950s the landfill activity was close to the boundary between the two properties and it appears that some debris material may have been placed onto the Site. This debris potentially contains materials that have high concentrations of metals. Plate 3 and 4 illustrate sample locations collected by AEI and by CKG in February 2015 overlain onto the 1953 and 1965 aerial photographs. Whitish material and soil disturbances are visible in the southwest corner of the Property in both photographs.

In April 20015 CKG collected soil samples from 18 potholes excavated in the vicinity of PA-3. The results of that investigation are presented in CKGs *Report of Potholing Exploration and Soil Sampling, dated August 5, 2015* and are also presented below in Section 5.1.

3.0 GEOPHYSICAL SURVEY

CKG contracted with Norcal Geophysical in September 2015 to evaluate the distribution of debris at the site. A copy of the Norcal report is included in Appendix A. Norcal used a total of four geophysical methods to evaluate the area as follows:

1. Total Field Magnetic (TF) Survey: The TF method can define localized variations in the earth's magnetic field that may be caused by buried USTs, drums, underground vaults, reinforced concrete pads, and other miscellaneous debris.
2. Terrain Conductivity (TC) Survey: The TC method is used to delineate localized variations in the electrical conductivity of the subsurface materials. These variations are typically caused by changes in soil type, certain changes in soil chemistry, porosity, moisture content, and fill areas. The presence of buried metallic and non-metallic debris can affect the conductivity of the subsurface as well.
3. Electromagnetic Metal Detection (MD) Survey: The MD method is used to detect and delineate shallowly buried metallic objects. It is typically used to characterize suspect metallic objects initially delineated with the TF and TC methods.
4. Ground penetrating radar (GPR) Survey: GPR is used to image the shallow subsurface by measuring the variations of radar signal transmission and reflection. Distinctive reflection variations can be caused by buried objects, voids, and changes in material. Typically, GPR is used to further characterize targets identified with the other methods noted above. Under favorable conditions GPR can aid in delineating the approximate size and depth of burial of a detected object.

More detailed descriptions of the geophysical methods, standard data acquisition and analysis procedures, the geophysical instrumentation and the limitations of the geophysical methods are provided in Appendix A.

3.1 TF ANOMALIES

The results of the TF survey are shown on Plate 2 in Appendix A. This map displays data contour lines that represent the variation of magnetic intensity. Some of the contour lines are highly contorted and form contour closures. Such highly contorted contours are typically considered anomalous and often can be attributed to buried metallic ferrous debris.

Several zones of suspected metal debris are depicted on the map by the figures with a red hachured pattern. The highest concentration of these patterns is located in the northern portion of the study area, especially in the areas adjoining the concrete rubble pile. The large irregularly-shaped zones contour closures probably represent areas with multiple subsurface metallic objects buried in close proximity to each other. The smaller isolated contour closures comprised of either single semi-circular patterns or pairs of contour closures probably represent single isolated buried metal objects. This result is not unexpected considering the presence of rebar in the concrete and the potential presence of concrete foundation debris from former buildings that were located in that area.

3.2 TC ANOMALIES

The results of the TC survey are shown on the contour map presented on Plate 3 in Appendix A. This map displays the variation of terrain conductivity using a combination of data contours and color shading. Areas having average, or "background", conductivity values are assigned a pale yellow hue. Areas having elevated conductivity values are assigned a brown hue. Areas having lower conductivity values are assigned a blue hue.

Several zones of anomalous conductivity were apparent. Some of the zones represent areas with elevated terrain conductivity, as depicted by the hachured brown shapes figures. These zones typically can be attributed to accumulations of silt and clay, areas of higher soil moisture, buried metal objects, and concentrations of disseminated metal particles and their oxides (i.e. residue found in debris and burn pits). Other anomalous zones represent areas with lowered terrain conductivity, as depicted by the hachured blue figures. These latter zones are typically attributed to areas having lower silt and clay content, lower soil moisture, or buried material with lower electrical conductivity such as brick, concrete debris, and wood.

3.3 MD AND GPR SURVEYS

The MD survey defined a single anomalous feature that could be identified as an isolated metallic object. This object is located in the southern portion of the survey area and appears to be approximately 10-feet long and 4-feet wide, as depicted on Plates 2-4 in Appendix A by the small blue rectangle. The MD instrument response was consistent with the object possibly being an underground storage tank, though the other similarly sized objects (such as a buried reinforced concrete pad or foundation) cannot be ruled out. Several GPR survey traverses were conducted over the MD anomaly in an effort to further characterize it, but the results were inconclusive.

3.4 COMPILATION MAP

Plate 4 of Appendix A is a compilation map that combines the findings of February 2015 CKG investigation with the results of the geophysical investigation. The map depicts the locations of the gasoline UST excavation and various "lead distribution" zones delineated by CKG (shaded solid figures) and the NORCAL interpreted anomalous zones resulting from this latest investigation (colored hachured figures). Also depicted are the locations of the former building footprints and various soil sample and pothole locations from the February 2015 investigation, and the UST investigation.

3.5 CONCLUSIONS OF THE GEOPHYSICAL SURVEY

The geophysical survey produced a number of responses that are consistent with debris fill as well as responses that could be caused by moist soil from the wetlands, and concrete rubble and former foundations. These data will be used in concert with subsurface investigations and historical aerial photograph review to understand the extent of debris at the site.

4.0 SOIL GAS SURVEY

CKG contracted with Ninyo & Moore in September 2015 to complete a soil gas investigation. A copy of the Ninyo & Moore report is included in Appendix B. On September 22, 2015, Ninyo & Moore installed five temporary soil gas probes and collect soil gas samples to evaluate them for the presence of landfill gas. Probes were installed within the fill area and outside the known fill area as shown on Figure 2 of Appendix B. A detailed descriptions of the soil gas probe installation and sampling methods are provided in Appendix B

Soil gas samples collected contained some volatile organic constituents such as benzene, toluene, ethylbenzene and xylenes, but all were below ESLs for soil gas. It is probable that these are present in the soil gas due to the former underground storage tanks at the site and associated gasoline release. Although methane was detected in the soil gas samples its concentration was below Title 27 screening levels and may be present because of the marshy nature of the site.

5.0 SOIL INVESTIGATIONS

CKG completed the subsurface soil investigation in two phases. The first phase was conducted in April 2015, and the second in October 2015 as described below.

5.1 APRIL INVESTIGATION

On April 28, 2015, CKG personnel and a hired excavator conducted a pothole exploration program in an area that extends outward from PA-3 and encompasses the southwest corner of the Site, as shown on Plate 5. A total of 19 potholes were excavated and sampled (PH-1 through PH-19). The maximum planned depth of excavation was 10 ft. bgl, which is the maximum depth that could be reached with the excavator. Samples were collected in each sampling location at depths of 1 foot, 2 or 2.5 ft. bgl, and at the base of apparent fill. The maximum depth of the fill encountered during the exploration was approximately 5 ft. bgl. The deepest sample from each pothole was collected directly below the maximum depth of the fill in that area. Samples were collected from the excavator bucket in 2-inch-diameter stainless steel sample sleeves that were then sealed, labeled, and stored with ice in an ice chest. Pothole locations are shown on Plate 5. If no debris was observed in a pothole samples were not collected and the area was presumed to be free of elevated metals at that location.

5.2 OCTOBER INVESTIGATION AND GROUNDWATER SAMPLE

On October 5 and 6, 2015, CKG excavated 20 additional potholes (PH20—PH39) to delineate the northern extent of debris and confirm the lead concentrations within it. Another composite sample was collected and analyzed for the full suite of analyses described above for the purposes of profiling. Selected samples were submitted for analysis of TCLP lead. To assess the potential that groundwater is impacted by lead, a grab groundwater sample was collected at PH24. This pothole was selected because it is downgradient of most of the burn debris but still within the burn debris. The groundwater sample was analyzed for soluble lead with none detected above the laboratory reporting limit.

5.3 CHEMICAL ANALYSES

Soil samples were submitted under chain-of-custody to McCampbell Analytical Laboratory in Pittsburg, California. The following chemical analysis was performed on discrete samples collected from the potholes:

- CAM 17 metals by EPA Method 6020

The samples also included four-point composite samples that were made from soil collected at selected sampling locations. These composite samples were analyzed to provide data to characterize the material for future excavation and disposal. These composite samples were analyzed as follows:

- RCRA Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag)
- Volatile Organic Constituents (VOCs)—EPA Method 5035/8260B
- Semivolatile Organic Constituents (SVOCs)—EPA Method 8270D
- Polychlorinated biphenyls (PCBs)—EPA Method 3540/8082A
- TPH as gasoline, diesel and motor oil—EPA Method 8015C

If a metal exceeded ten times the Soluble Threshold Limit Concentration (STLC) for the metal, selected samples were analyzed for soluble concentrations of the metal. Selected samples that exceeded the STLC also were analyzed by the Toxicity Characteristic Leaching Procedure (TCLP), to evaluate if the materials would be characterized as a RCRA waste.

6.0 SOIL SAMPLING RESULTS

The following describes the results of the soil sampling and chemical analysis from the April 28, and October 5-6, 2015 potholing excavations at the Site. Concentrations of detected metals are compared to the residential and industrial ESLs, as compiled in the: “Derivation and Application of Environmental Screening Levels”, San Francisco Bay Regional Water Quality Control Board, December 2013. Concentrations of metals also were compared to California Code of Regulations (CCR) Title 22 Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC). Sample results are presented in Table 1. Analytical laboratory reports are included in Appendix C. Pothole locations are presented on Plate 5.

6.1 METALS DATA SUMMARY

Lead was detected at concentrations exceeding both the residential and industrial ESLs of 80 and 320 milligrams per kilogram (mg/kg) in 42 of 79 discrete samples analyzed and in four of ten composite samples analyzed. Of those samples, 20 exceeded the TTLC of 1000 mg/kg. Selected samples where the metals concentration exceeded 10 times the STLC were analyzed for soluble lead. Seven of the 12 samples analyzed for soluble lead exceeded the STLC of 5 mg/l. Ten samples also were analyzed for TCLP lead as shown on Table 2. TCLP lead was not detected above 5 mg/l. Metal distributions are illustrated on Plate 5.

Nickel was detected in soil sample PH4-1' at a concentration exceeding both ESLs. Cobalt was detected in soil samples PH-14, and PH-16 at a concentration exceeding the residential ESL and in PH-13 at a concentration exceeding the residential and industrial ESLs. Zinc was detected in soil samples PH4-4', PH5-2', PH11-2.5', PH12-2.5' PH14-4', and PH16-2.5' at concentrations exceeding both ESLs. These metals were not detected at concentrations exceeding the TTLC or 10 times the STLC. No other metals were detected above any of the screening concentrations in soils samples collected during this sampling event.

6.2 STATISTICAL ANALYSES FOR METALS

To evaluate the metals concentrations in the burn debris samples CKG used ProUCL, 5.0, a statistical program developed by the U.S Environmental Protection Agency. The program evaluates the population of data at a given site and calculates the mean, the standard deviation and the upper confidence limit of the data as established by the user. The 95% UCL was used for these analyses. CKG used the lead data collected from the actual burn debris and samples collected immediately below it. If the 95% UCL exceeded the desired cleanup goal, then selected “hot spots” are removed until the cleanup goal is met. In the case of lead, the initial 95% UCL was 1240-1890 mg/kg depending on whether or not the analysis considered the data to be normally distributed, lognormally distributed or nonparametric. This is illustrated in the first analyses contained in Appendix D. If all soil with a lead concentration of 250 mg/kg or higher is removed, then the 95% UCL dropped below the residential ESL of 80 mg/kg as illustrated in the following 3 analyses contained in Appendix D.

The same process was applied to Cobalt and the 95% UCL was 18.72 to 24.52 which is slightly higher than the residential ESL of 23. Printouts of the ProUCL output for lead and cobalt are contained in Appendix D.

6.3 DATA SUMMARY FOR OTHER CONSTITUENTS

No VOCs, SVOCs, or PCBs were detected above laboratory reporting limits in the composite samples analyzed. Low concentrations of petroleum hydrocarbons were detected in composite samples as presented in Table 2. Residential and industrial ESLs for motor oil were exceeded in initial discrete samples but not in the composite samples.

7.0 DISCUSSION

The potholing exploration program, in addition to previous soil sampling data, has confirmed that elevated metals occur at the Site and the source of those metals is debris that was placed at the Site in the past. The debris is consistent with burned landfill material and the operation of the now closed Casa Grande Landfill to the west is the suspected source of the debris. The main constituent of concern is lead, although there are some elevated concentrations of cobalt, nickel and zinc that for the most part occur with the lead. Minor incidental heavy petroleum hydrocarbons also occur with the debris. There is one location that appears to have a cobalt concentration above its residential ESL without elevated lead. The source of the cobalt is not clear. Only lead has concentrations that exceed its TTLC or STLC. The TCLP for lead was not exceeded.

In the State of California if a constituent exceeds its STLC or TTLC it is considered a California Hazardous Waste for the purposes of disposal. Based on the potholing exploration and soil sampling results, the elevated lead occurs exclusively within the debris layer, and has not leached into soil or groundwater below the debris layer. Field observations indicate that the debris occurs typically at a depth of 2.5 feet bgl, although it can be shallower in some locations. Also the debris layer varies from one to three feet thick but is typically approximately 2 feet thick, potentially tapering off to the northwest toward Casa Grande Road.

The distribution of the lead impacted debris as shown on Plate 5 was interpreted by using the analytical data, field observations, and examining aerial photographs from 1953 and particularly 1965. The boundaries of each impacted area are estimated based on looking for boundaries of what appeared to be disturbed soil in the historical photographs and what was observed in the potholes. These boundaries are estimates and some areas are uncertain as indicated by question marks on Plate 5. Despite the uncertainties, the approximate areal extent of impacts and the volume of debris classified as California hazardous waste are:

Total Area (ft ²)	77,000 or 80,000ft ² (1.77 acres)
Total Volume (ft ³)	155,000 or 160,000ft ³
Total Volume (yards ³)	5,700 or 6,000 yd ³
Total Tonnage (1.5x yd ³)	8,600 or 9,000 tons

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the debris layer investigation the following conclusions and recommendations can be made:

8.1 CONCLUSIONS

The approximate vertical and lateral extent of the debris waste and associated metal impacts have been determined by a synthesis of data provided through a geophysical survey, aerial photography, understanding of historical operations and soil potholing investigations. Areas of uncertainty remain with respect to the extent of debris underneath the concrete stockpile and immediately north of the investigation area in the vicinity of the driveway.

Based on the results of recent investigations, approximately 9,000 tons of material exist at the Site with lead concentrations characterized as California Hazardous Waste.

Soil vapor sampling did not indicate the presence of landfill gas within and adjacent to the burn debris area. Soluble lead was not detected in groundwater collected from immediately below the debris area.

Although there are some uncertainties in the exact volumes of affected materials there is sufficient information to plan and implement a soil remediation project. Based on proposed future land use, Baywood will prepare a plan for Clean Closure.

8.2 RECOMMENDATIONS

CKG will prepare a clean closure plan on behalf of Baywood LLC. This plan will be submitted to the RWQCB for review and concurrence before implementing the plan.

9.0 REFERENCES

AEI Consultants, *Draft Phase II Subsurface Investigation, 2592 Lakeville Highway, Petaluma, California*, September 2, 2014.

California Regional Water Quality Control Board – San Francisco Bay Region, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Final*, December 2013.

CKG Environmental, Inc., 2015 *Report of Potholing Exploration and Soil Sampling, 2592 Lakeville Highway, Petaluma, CA*, August 5, 2015.

CKG Environmental, Inc., 2015 *Technical Memorandum, Summary of Soil Sampling to Confirm AEI findings at PA-3, 2592 Lakeville Highway, Petaluma, CA*, March 13, 2015.

California Regional Water Quality Control Board (RWQCB). 2013 *Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, Interim Final*. December 2013.

Delta Environmental Consultants, Inc. (Delta).1996.*Monitoring Well Installation and Ground Water Sampling Results*. December 3, 1996

Delta Environmental Consultants, Inc. (Delta).1997.*Well Destruction Report*. June 9, 1997

Delta Environmental Consultants, Inc. (Delta).2000.*Appendix B Closure Report*, Darling International, Inc., Former Royal Tallow & Soap Company Property, 2592 Lakeville Highway, Petaluma, California. March 30, 2000.

Duvergé, Dylan Jacques, *Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region*, Masters Thesis, San Francisco State University, 2011.

Ecology and Environmental, Inc. (EEL). 1990. *Royal Tallow and Soap Company, Petaluma, California, Underground Storage Tank Site Characterization Report*. August 14, 1990.

Ecology and Environmental, Inc. (EEL). 1991. *Royal Tallow and Soap Company, Petaluma, California, Supplemental Site Characterization Report*. August 23, 1991.

MFG, Inc.2000. *Remediation Work Plan, Former Royal Tallow and Soap Facility, 2592 Lakeville Highway, Petaluma, California*. October 25, 2000.

Risk-Based Decisions (RBD). 1996. *Risk-Based Corrective Action Report for the Former Royal Tallow and Soap Company Site in Petaluma, California*. January 29, 1996

Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD). 2000a. Letter to Darling International, Inc. -*Subject: 2592 Lakeville Highway, Petaluma- Leaking Underground Storage Tank Site, [SCDHS-EHD Site# 1359, SFBRWQB Site #49-0142]*. April 20, 2000.

Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD). 2000b. Letter to Darling International, Inc. -*Subject: 2592 Lakeville Highway, Petaluma - Leaking Underground Storage Tank Site*, [SCDHS-EHD Site # 1359, SFBRWQB Site #49-0142]. October 30. 2000.

Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD). 2001. Letter to Darling International, Inc. -*Subject: 2592 Lakeville Highway, Petaluma - Leaking Underground Storage Tank Site*, SCDHS-EHD Site # 1359, SFBRWQB Site #49-0142, Review of Analytical Test Results for Excavation of Contaminated Soil and Exploratory Step-out Borings. June 11. 2001,

10.0 LIMITATIONS

CKG Environmental, Inc. prepared this report in accordance with generally accepted standards of care which exist in Northern California at this time. It should be recognized that definition and evaluation of geologic and environmental conditions is a difficult and an inexact science.

Conclusions and recommendations presented in this report are based on the results of excavating potholes and collecting soil samples and quantitative analysis of those samples conducted by McCampbell Analytical. Only work described herein was performed. As such CKG cannot render opinions on issues not resulting directly from the work performed.

Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present. More extensive studies, including additional subsurface investigations, may be performed to reduce uncertainties. If the client wishes to reduce the uncertainties of this investigation, CKG should be notified for additional consultation. No warranty, expressed or implied, is made.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both onsite and offsite) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify CKG of such intended use. Based on the intended use of the report, CKG may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release CKG from any liability resulting from the use of this report by any unauthorized party.

TABLES

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead	
Previous Investigation Data																					
PA-3	6/18/14	22							280	930								2000			
CS PA-3	2/12/15	18							270	1800								4300			
CS PA-3N	2/12/15	20							810	1400								3400			
CS PA-3SW	2/12/15	24							1300	2800								3900			
CS PA-3SE	2/12/15	25							670	1500								3600			
Data Collected During Potholing Investigation																					
PH1-1'	4/28/15	<0.5	1.9	170	0.56	<0.25	34	7.9	18	6.40	0.17	<0.5	40	<0.5	<0.5	<0.5	30	31			
PH1-2.5'	4/28/15	2.6	6.7	180	<0.5	1.7	45	14	49	250	0.19	0.74	38	<0.5	<0.5	<0.5	32	620	2.8	<0.2	
PH1-4'	4/28/15	<0.5	4.0	310	0.92	0.28	62	9.4	33	20	0.10	0.69	44	<0.5	<0.5	<0.5	57	81			
PH1-5'	4/28/15	<0.5	6.9	180	0.62	<0.25	34	7.1	24	16	<0.05	0.54	29	<0.5	<0.5	<0.5	33	58			
PH2-2.5"	4/28/15									1300										<0.2	
PH3-1.5'	4/28/15	<0.5	2.8	100	<0.5	<0.25	34	10	15	6.6	0.098	<0.5	37	<0.5	<0.5	<0.5	30	29			
PH3-3'	4/28/15	3.9	15	270	<0.5	2.1	65	13	170	520	0.63	3.3	78	<0.5	<0.5	<0.5	45	690	18		
PH3-4'	4/28/15	<0.5	1.8	38	0.52	<0.25	40	6.7	28	9.2	0.13	0.6	37	<0.5	<0.5	<0.5	29	54			
PH4-1'	4/28/15	<0.5	1.8	190	0.58	<0.25	32	7.2	18	6.3	0.15	<0.5	335	<0.5	<0.5	<0.5	26	29	1.7 Ni		
PH4-2.5'	4/28/15	0.65	6.6	160	0.58	0.27	41	14	32	50	0.12	0.63	44	<0.5	<0.5	<0.5	36	200			
PH4-4'	4/28/15	2.5	6.5	180	0.58	0.86	53	13	94	240	0.36	0.67	50	<0.5	<0.5	<0.5	46	1100	4.8		
PH4-5'	4/28/15	<0.5	9.8	150	0.84	<0.25	40	11	22	8.7	0.062	0.53	44	<0.5	<0.5	<0.5	52	36			
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600			
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600			
TTLIC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000		
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5		

mg/kg: milligrams per kilogram

	Highlighted data exceeds the ESL
	Highlighted data exceeds the industrial/commercial ESL
	Highlighted data exceeds the STLC or TTLIC

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH5-2'	4/28/15	50	7.4	320	<0.25	2.4	54	11	210	1900	0.42	0.7	58	<0.5	0.69	<0.5	39	1300	110	0.77
PH5-4'	4/28/15	1.8	2.4	220	0.88	0.54	48	12	41	43	0.28	<0.5	55	<0.5	<0.5	<0.5	38	160		
PH5-5'	4/28/15	<0.5	3.2	140	0.63	<0.25	38	7.1	18	7.8	<0.05	<0.5	36	<0.5	<0.5	<0.5	43	25		
PH6-1'	4/28/15	<0.5	3.7	140	0.69	<0.25	43	12	24	13	0.14	<0.5	41	<0.5	<0.5	<0.5	39	44		
PH6-2.5'	4/28/15	1.9	4.4	160	0.56	0.83	54	15	55	120	0.14	<0.5	65	<0.5	<0.5	<0.5	37	330	3.0	
PH6-3.5	4/28/15	<0.5	4.7	110	0.84	0.32	53	9.6	34	10	0.19	0.83	55	<0.5	<0.5	<0.5	45	72		
PH6-4.5'	4/28/15	<0.5	6.5	170	0.64	<0.25	34	25	19	10	<0.05	0.54	37	<0.5	<0.5	<0.5	35	27		
PH7-2'	4/28/15	0.56	3.6	190	0.55	<0.25	64	18	29	14	0.094	<0.5	77	<0.5	<0.5	<0.5	46	53		
PH7-3'	4/28/15	<0.5	2.6	140	0.67	<0.25	40	18	23	11	0.11	<0.5	50	<0.5	<0.5	<0.5	39	41		
PH7-4'	4/28/15	<0.5	5.9	100	0.51	<0.25	38	5.1	21	5.7	0.081	2.3	26	<0.5	<0.5	<0.5	38	37		
PH8-2'	4/28/15	<0.5	3.3	180	0.67	<0.25	43	13	22	9.9	0.14	<0.5	46	<0.5	<0.5	<0.5	37	37		
PH8-4'	4/28/15	<0.5	4.7	66	0.5	<0.25	44	9.1	25	19	0.19	<0.5	43	<0.5	<0.5	<0.5	39	78		
PH9-2'	4/28/15	<0.5	2.1	110	0.57	<0.25	35	8.8	17	6.8	0.088	<0.5	35	<0.5	<0.5	<0.5	28	28		
PH9-4'	4/28/15	1.2	7.9	160	0.7	0.44	73	12	56	59	0.41	0.97	68	<0.5	<0.5	<0.5	60	220		
PH10-2'	4/28/15	0.72	7.0	250	0.8	0.43	54	17	38	38	0.18	0.66	65	<0.5	<0.5	<0.5	53	210		
PH10-4'	4/28/15	1.2	6.8	220	0.66	0.85	64	11	78	66	0.27	0.88	78	<0.5	<0.5	<0.5	55	260		
PH11-1'	4/28/15	<0.5	3.1	210	0.79	<0.25	53	8.7	26	11	0.16	<0.5	47	<0.5	<0.5	<0.5	45	44		
PH11-2.5'	4/28/15	3.5	13	250	0.67	3.5	63	16	140	500	0.94	1.6	70	<0.5	0.51	<0.5	53	1400	41	<0.2
PH11-4'	4/28/15	<0.5	8.9	180	0.65	0.49	78	13	44	24	0.51	0.64	77	<0.5	<0.5	<0.5	61	160		
PH11-5'	4/28/15	<0.5	14	67	0.62	0.32	46	6.9	44	12	0.15	1.9	35	0.57	<0.5	<0.5	49	57		
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLIC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

- Highlighted data exceeds the ESL
- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLIC

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH12-1'	4/28/15	<0.5	3.1	290	<1.0	<0.25	52	9.5	25	7.6	0.24	<0.5	52	<0.5	<0.5	<0.5	46	40		
PH12-2.5'	4/28/15	2.3	11	240	<1.0	2.3	57	16	89	290	0.42	1.0	60	<0.5	<0.5	<0.5	46	810	10	<0.2
PH12-3.5'	4/28/15	0.8	4.3	87	<1	1	49	9.2	77	85	0.38	<0.5	50	<0.5	<0.5	<0.5	36	350		
PH12-4.5'	4/28/15	<0.5	2.5	140	<1.0	0.78	25	4.2	30	6.4	0.078	1.0	36	0.7	<0.5	<0.5	31	62		
PH13-2'	4/28/15	<0.5	4.0	110	<1.0	<0.25	32	115	16	14	0.10	0.76	45	<0.5	<0.5	<0.5	33	44		
PH13-4'	4/28/15	<0.5	6.4	160	<1.0	<0.25	31	12	14	5.9	0.056	<0.5	33	<0.5	<0.5	<0.5	45	29		
PH14-1'	4/28/15	0.78	3.5	120	<1.0	2.7	58	14	31	40	0.21	<0.5	53	<0.5	<0.5	<0.5	62	95		
PH14-2.5'	4/28/15	0.62	3.5	180	<0.5	<0.25	50	15	26	21	0.18	<0.5	48	<0.5	<0.5	<0.5	51	80		
PH14-4'	4/28/15	3.8	8.2	160	<1.0	2.3	58	15	92	390	0.45	1.5	64	<0.5	<0.5	<0.5	62	840	15	0.87
PH14-5'	4/28/15	<0.5	8.1	210	<1.0	<0.25	41	44	17	8.9	0.051	0.93	44	<0.5	<0.5	<0.5	59	33		
PH15-2'	4/28/15	<0.5	6.9	160	<1.0	<0.25	53	14	22	54	0.19	<0.5	59	<0.5	<0.5	<0.5	45	77		
PH15-4'	4/28/15	<0.5	8.5	180	<1.0	<0.25	43	24	27	27	0.18	1.4	53	<0.5	<0.5	<0.5	55	210		
PH15-5'	4/28/15	<0.5	9.8	160	<1.0	<0.25	48	12	20	7.4	0.065	<0.5	38	<0.5	<0.5	<0.5	67	35		
PH16-1'	4/28/15	3.3	48	250	<1.0	0.8	60	19	130	300	0.29	1.7	59	<0.5	<0.5	<0.5	59	490		
PH16-2.5'	4/28/15	5.3	6.4	240	<0.5	1.9	54	13	130	400	0.20	0.56	56	<0.5	<0.5	<0.5	44	960	27	<0.2
PH16-4'	4/28/15	3.5	5.5	240	0.59	0.83	50	12	76	160	0.46	<0.5	49	<0.5	<0.5	<0.5	53	480		
PH16-5'	4/28/15	<0.5	8.0	310	0.66	<0.25	40	36	19	9.9	0.050	0.56	42	<0.5	<0.5	<0.5	54	30		
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLIC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

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- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLIC

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH17-1'	4/28/15	0.70	3.9	160	<0.5	<0.25	79	13	29	7.8	0.059	<0.5	75	<0.5	<0.5	<0.5	51	45		
PH17-2.5'	4/28/15	0.56	3.2	270	0.75	0.66	55	12	30	40	0.25	<0.5	66	<0.5	<0.5	<0.5	42	170		
PH17-4'	4/28/15	0.89	6.4	160	0.73	1.3	59	14	63	23	0.24	1.3	59	<0.5	<0.5	<0.5	63	470		
PH17-5'	4/28/15	<0.5	4.7	110	0.71	<0.25	43	5.6	13	7.9	<0.05	0.71	28	<0.5	<0.5	<0.5	47	30		
PH18-1'	4/28/15	2.3	9.6	440	0.53	<0.25	47	16	52	99	0.12	1.1	57	<0.5	<0.5	<0.5	63	92		
PH20-2.5'	10/5/15									27										
PH21-2.25'	10/5/15									900										
PH22-2'	10/5/15									420										
PH23-2'	10/5/15									1900										
PH24-3'	10/5/15									430										
PH25-2'	10/5/15									710										
PH26-2'	10/5/15									520										
PH27-2.5'	10/5/15									5000										4.8
PH28-3'	10/5/15									920										
PH29-1.5'	10/5/15									1000										
PH30-3'	10/5/15									10000										<0.2
PH31-3'	10/5/15									5400										<0.2
PH32-3.5'	10/5/15									1900										
PH33-3.5'	10/5/15									4700										
PH34-3'	10/5/15									4600										
PH35-3'	10/5/15									2300										
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

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- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLC

TABLE 1
Concentration of Metals in Soil Samples
2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead	
PH36-2'	10/5/15									1200											
PH37-2.5'	10/5/15									1300											
PH38-3'	10/5/15									4300											
PH39-1.5'	10/5/15									2100											
PH1,6,11,17-1' comp	4/28/15		7.5	180		1.6	45			250	0.17			<0.5	<0.5					<0.2	
PH1,6,11,17-2.5' comp	4/28/15		6.6	180		<0.25	35			17	<0.05			<0.5	<0.5						
PH1,11,17,4' PH6-3.5' comp	4/28/15		3.3	110		<0.25	40			7.5	0.12			<0.5	<0.5						
PH3-3', 18-3', 12-2.5' comp										180											
PH1,11,17,5' PH6-4.5' comp	4/28/15		7.4	140		<0.25	43			8.1	0.054			<0.5	<0.5						
PH2,4,14,16-1' comp	4/28/15		3.9	240		0.05	67			22	0.23			<0.5	<0.5						
PH4,14,16-2' PH2-2.5' comp	4/28/15		6.2	150		1.1	45			270	0.21			<0.5	<0.5						12.00
PH2,4,14,16-4' comp	4/28/15		1.8	42		0.28	41			10	0.16			<0.5	<0.5						
PH2,4,14,16-5' comp	4/28/15		5.3	130		<0.25	37			8.4	0.079			<0.5	<0.5						
Ph23, 30, 32, 34 comp	10/5/15		33	3200		6.60	58.00			2100.00	0.67			<0.5	2.20						
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600			
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600			
TTLC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000		
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5		

mg/kg: milligrams per kilogram

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- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLC

TABLE 2
 Petroleum Hydrocarbon Concentrations
 2592 Lakeville Highway
 Petaluma, CA

Sample ID	Sample Date	TPH _g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TPH _d	TPH _m
Previous Investigation Data									
PA-3	6/18/14	<1	<0.005	<0.005	<0.005	<0.005	<0.05	89	660
CS PA-3	2/12/15								1000
CS PA-3N	2/12/15								150
CS PA-3SW	2/12/15								130
CS PA-3SE	2/12/15								590
Data Collected During Potholing Investigation									
PH1,6,11,17-1' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH1,6,11,17-2.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH1,11,17,4' PH6-3.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH3-3', 18-3', 12-2.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH1,11,17,5' PH6-4.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH2,4,14,16-1' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	2.1	5.6
PH4,14,16-2' PH2-2.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	1.3	21
PH2,4,14,16-4' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	2.8	30
PH2,4,14,16-5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH28, 30, 32, 34 3' comp	10/5/15	19	<0.005	<0.005	<0.005	<0.005	<0.05	60	78
Res. ESL		100	0.74	9.3	4.7	11	8.4	100	100
Ind. ESL		500	1.2	9.3	4.7	11	8.4	110	500

all data in mg/kg: milligrams per kilogram
 If blank analyte was not analyzed.

Highlighted data exceeds the ESL

Highlighted data exceeds the industrial/commercial ESL

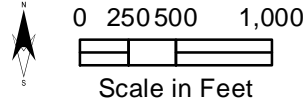
PLATES



Drawn by P. Dellavalle February 2015. Base layers are aeriels provided by ArcGIS Online.

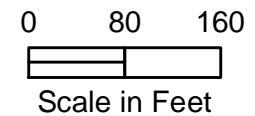


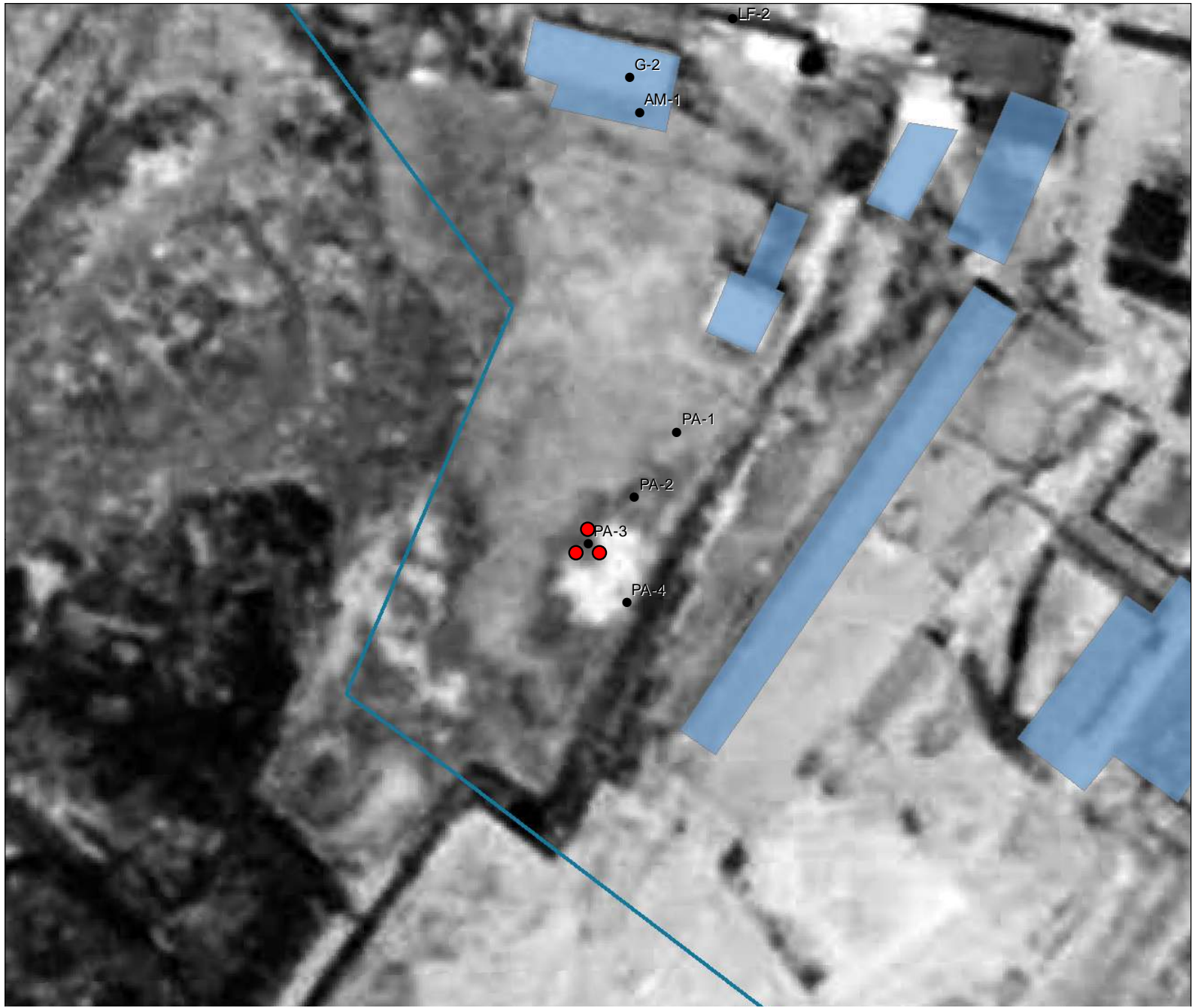
- Explanation**
- Site Boundary
 - Railroad
 - Parcels



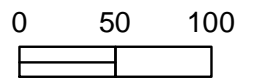


- Explanation**
- Previous Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Excavation Area
 - Site Boundary

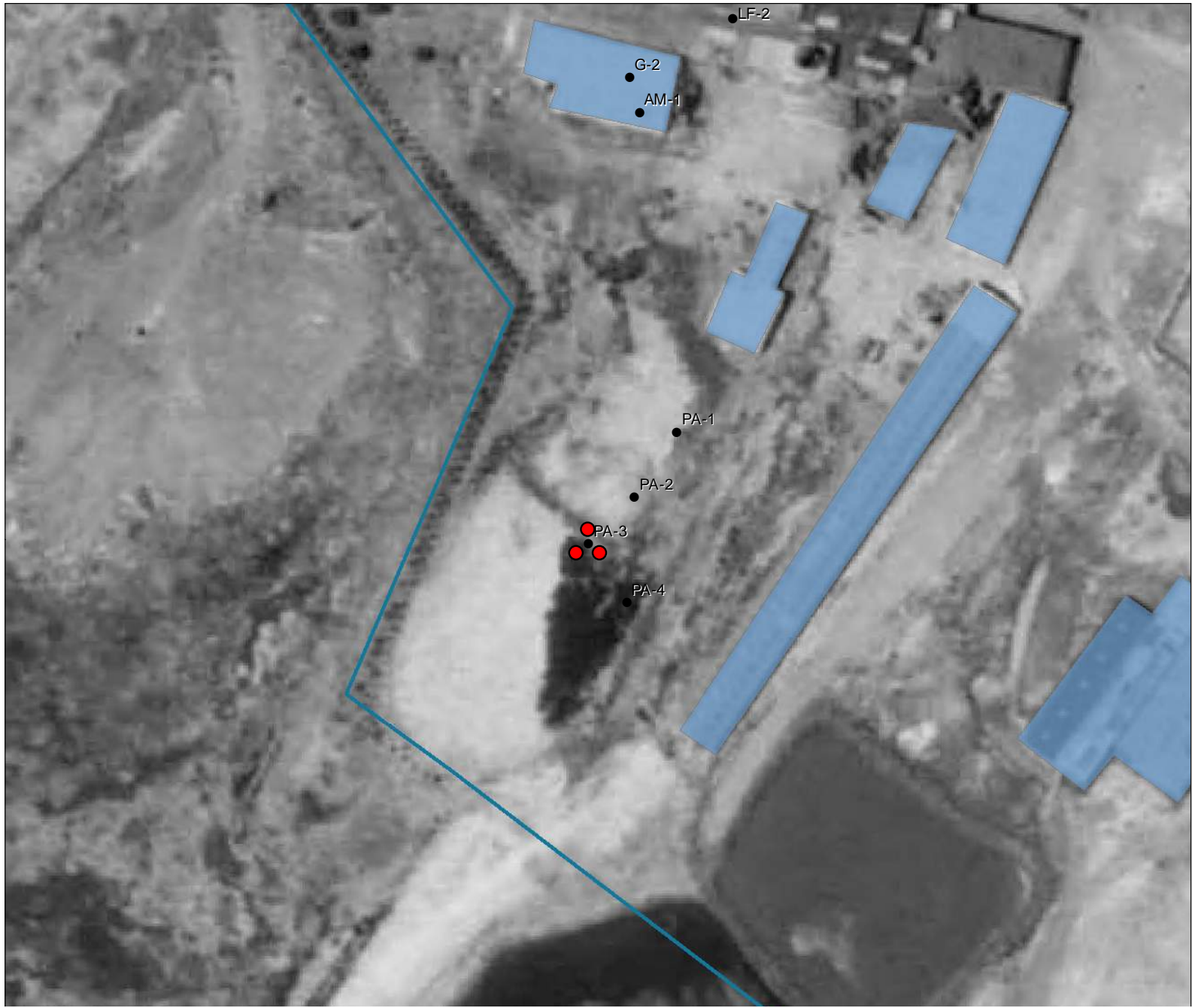




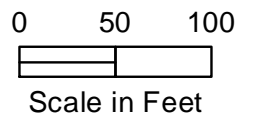
- Explanation**
- Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Site Boundary



Scale in Feet



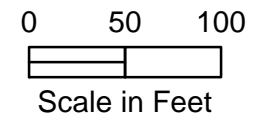
- Explanation**
- Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Site Boundary





Explanation

- Sample Location
- Pot Hole Location October 2015
- Pot Hole Location April 2015
- ▲ Pot Hole Location (No Visible Debris)
- ▨ Pb Concentrations > TTLC or STLC
Dashed where covered by overburden
- ▨ Metal Concentration > Res. ESL
- Pb Concentration > 80 ppm
- Historic Building Footprints
- ▭ Site Boundary



**REPORT OF POTHOLING EXPLORATION
AND SOIL SAMPLING**

**2592 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA**



CKG Environmental, Inc.

P.O. Box 246
St. Helena, CA 94574

A Report Prepared for:

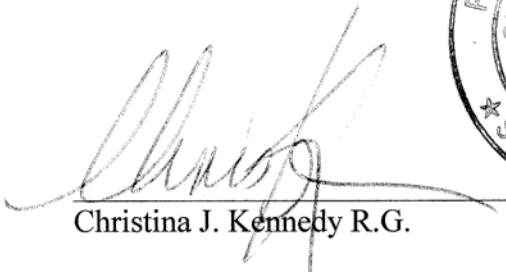
Mr. Larry Wasem
Baywood LLC
414 Aviation Boulevard.
Santa Rosa, CA 95403-1069

**REPORT OF POTHOLING EXPLORATION
AND SOIL SAMPLING**

**2592 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA**

August 5, 2015

Prepared by:



Christina J. Kennedy R.G.



Principal

CKG Environmental, Inc.
P.O. Box 246
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Plate 4 Site Investigation Area Overlain on 1965 Aerial Photograph

Plate 5 Pothole Locations and Residual Lead Map

APPENDICES

Appendix A Analytical Laboratory Reports

1.0 EXECUTIVE SUMMARY

The subject site, located at 2592 Lakeville Highway, Petaluma, California, has been the subject of several subsurface explorations and soil remediation due to a gasoline release from former underground fuel storage tanks at the site. The fuel release was regulated by the County of Sonoma Department of Health Services, Environmental Health Division (SCEHD) and received regulatory closure on July 30, 2004. A subsequent investigation in 2014 by a prospective property buyer uncovered potential concerns in the vicinity of the former wastewater ponds operated at the site. Elevated concentrations of petroleum hydrocarbons and metals were discovered in soil at one location at a depth of approximately 2.5 feet below ground surface. In 2015, CKG Environmental, Inc. completed shallow subsurface sampling to assess the extent of the impact.

This potholing exploration and soil sampling report has confirmed the approximate vertical and lateral extents impacted fill and the associated metals in soil. California hazardous concentrations of lead occur in a “T” shaped area that partially parallels a former drainage ditch then extends westward to the row of trees at the western property line. In this location lead was detected in soil samples at concentrations exceeding both the residential and industrial State of California Regional Water Quality Control Board, San Francisco Bay Region (SFBRWQCB) Environmental Screening Levels (ESLs) and the California Code of Regulations Title 22 Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC). Materials that exceed the STLC or TTLC are considered California Hazardous Waste for the purposes of disposal. Lead in exceedance of the residential ESL was detected in samples from just outside the boundaries of the California Hazardous Waste area.

In addition to lead, cobalt nickel and zinc were detected at concentrations that also exceeded the residential ESL. These metals exceedances coincide with the lead impacts except in the vicinity of one sample location (PH13)

Based on the results of this sampling approximately 3,666 tons of California Hazardous Waste exists at the Site and another 1500 tons of material exceed the residential ESL. The exact extent of metals impact is uncertain and could be refined with additional sampling. Although there are

some uncertainties in the exact volumes of affected materials there is sufficient information to plan and implement a soil remediation project depending on Baywood's proposed future use of the property.

CKG recommends that Baywood LLC submit this report to SCEHD so that they can reopen a case and provide regulatory oversight with respect to future work done at the site. In addition to providing this document to the SCEHD, Baywood LLC should meet with SCEHD to discuss next steps for the site and prepare a Corrective Action Plan to mitigate the elevated metals at the site.

2.0 INTRODUCTION

The following report presents the results and conclusions of the potholing exploration and soil sampling at 2592 Lakeville Highway, Petaluma, California, conducted by CKG Environmental, Inc.

2.1 SITE DESCRIPTION

The subject site (Site) consists of vacant land located to the south of Lakeville Highway and southeast of Casa Grande Road in a mixed commercial and residential area of Petaluma, California (Plate 1). The Site is approximately 13 acres in size and is surrounded by a barbed-wire security fence (Plate 2). The Site is not currently improved.

2.2 BACKGROUND

The Site has been the subject of several subsurface explorations and remediation due to the former presence of underground fuel storage tanks. Soil remediation activities were performed to address gasoline-range hydrocarbons present in soil to a depth of 5 feet below grade level (bgl) in the vicinity of two former gasoline UST excavations at the Site, (Plate 2). The former owner, Darling Delaware (Darling) implemented the soil remediation in accordance with the approved Soil Remediation Work Plan for the Site prepared by MFG (MFG, 2000).

Implementation of the Soil Remediation Work Plan began in November 2000 and was completed in August 2002. Between November 2000 and June 2001, approximately 2,390 cubic yards of gasoline impacted soil were removed to a depth of approximately 5 feet bgl from the area of the former gasoline UST excavations. The excavated soil was treated by enhanced bioremediation in on-site stockpiles. After the soil had been successfully treated, it was placed and compacted back into the excavation. All final confirmation samples from each stockpile section demonstrated that the soil reused at the Site did not contain detectable Total Petroleum Hydrocarbons as gasoline (TPHg), at a reporting limit of 1.0 mg/kg or either benzene, toluene, ethylbenzene, or xylenes (BTEX) compounds at a concentration greater than 0.0075 mg/kg.

Confirmation soil sample data from excavation sidewalls and floor demonstrated that the TPHg and BTEX remaining in the soil at the Site did not exceed Risk Based Screening Levels (RBSLs), which were selected as the cleanup goals for the Site. The fuel release was regulated by the County of Sonoma Department of Health Services, Environmental Health Division (SCEHD) and received regulatory closure on July 30, 2004.

In 2014, AEI Consultants of Walnut Creek, California, on behalf of DeNova Homes conducted a Phase II subsurface investigation of potential concerns associated with former wastewater ponds operated at the site (AEI Consultants, 2014). Of six samples collected in former pond areas only one sample, PA-3, contained elevated concentrations of analytes as follows:

Analyte (mg/kg)	PA-3 6/18/2014
TPH mo	660
Antimony	22
Copper	280
Lead	930
Zinc	2000

AEI sample locations are shown on Plate 2. PA-3 was collected at a depth of 2.5 feet ft bgl and appeared to be below sediments deposited in the former pond. Further, the boring log for PA-3 described debris such as brick and glass fragments in the sample, suggesting that some fill material may have been dumped in the vicinity.

To assess whether PA-3 was an isolated anomaly or was the result of a more widespread impact CKG collected four soil samples with an excavator on February 12, 2015. One sample was collected at the original location of PA-3. The three other samples were collected 10 feet away from PA-3 to the north, southeast, and southwest. All samples were collected from soil excavated from a depth of 2.5 (ft bgl), and analyzed for antimony, copper, lead, zinc, and TPH quantified as motor oil (TPHmo).

TPHmo and the metals antimony, copper, lead, and zinc were detected in all of the soil samples except one in concentrations at or exceeding the State of California Regional Water Quality

Control Board, San Francisco Bay Region (SFBRWQCB), Environmental Screening Levels (ESLs) for residential use, (Table 1)

Based on these sampling results CKG concluded that elevated metals and oil in the vicinity of PA-3 were not just anomalous or limited. In addition, debris was noted in all the samples collected.

CKG then evaluated the location and extent of potential past debris disposal by reviewing historical aerial photographs provided by Environmental Data Resources, Inc. (EDR). The aerial photographs reviewed were from various years from 1942 through 2012. Based on the aerial photography it appears that a landfill was operated on the property west of the Site from possibly as early as 1942 through at least 1982. During the early 1950s the landfill activity was close to the boundary between the two properties and it appears that some fill material may have been placed onto the Site. This fill potentially contains materials that have high concentrations of metals. Plate 3 and 4 illustrate sample locations collected by AEI and by CKG in February 2015 overlain onto the 1953 and 1965 aerial photographs. Whitish material and soil disturbances are visible in the southwest corner of the Property in both photographs.

CKG then recommended collecting additional samples to confirm that fill from the adjacent landfill was the source of the detected analytes, and to assess the lateral and vertical extent of impact.

3.0 POTHOLE EXCAVATION AND SOIL SAMPLING

3.1 POTHOLE EXCAVATION AND SOIL SAMPLING

On April 28, 2015, CKG personnel and a hired excavator conducted a pothole exploration program in an area that extends outward from PA-3 and encompasses the southwest corner of the Site, as shown on Plate 5. The maximum planned depth of excavation was 10 ft bgl, which is the maximum depth that could be reached with the excavator. Samples were collected in each sampling location at depths of 1 foot, 2 or 2.5 ft, bgl, and at the base of apparent fill. The maximum depth of the fill encountered during the exploration was approximately 5 ft bgl. The deepest sample from each pothole was collected directly below the maximum depth of the fill in that area. Samples were collected from the excavator bucket in 2-inch-diameter stainless steel sample sleeves which were then sealed, labeled, and stored with ice in an ice chest. Pothole locations are shown on Plate 5. If no debris was observed in a pothole samples were not collected and the area was presumed to be free of elevated metals at that location.

3.2 CHEMICAL ANALYSIS

Soil samples were submitted under chain-of-custody to McCampbell Analytical Laboratory in Pittsburg, California. The following chemical analysis was performed on discrete samples collected from the potholes:

- CAM 17 metals by EPA Method 6020

The samples also included four-point composite samples that were made from soil collected at selected sampling locations. These composite samples were analyzed to provide data to characterize the material for future excavation and disposal. These composite samples were analyzed as follows:

- RCRA Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag)
- Volatile Organic Constituents (VOCs)—EPA Method 5035/8260B
- Semivolatile Organic Constituents (SVOCs)—EPA Method 8270D
- Polychlorinated biphenyls (PCBs)—EPA Method 3540/8082A
- TPH as gasoline, diesel and motor oil—EPA Method 8015C

^

If a metal exceeded ten times the Soluble Threshold Limit Concentration (STLC) for the metal, that sample was analyzed for soluble concentrations of the metal. Selected samples that exceeded the STLC also were analyzed by the Toxicity Characteristic Leaching Procedure (TCLP), to evaluate if the materials would be characterized as a RCRA waste.

4.0 SOIL SAMPLING RESULTS

The following describes the results of the soil sampling and chemical analysis from the April 28, 2015 potholing excavations at the Site. Concentrations of all detected metals are compared to the residential and industrial ESLs, as compiled in the: “Derivation and Application of Environmental Screening Levels”, San Francisco Bay Regional Water Quality Control Board, December 2013. Concentrations of metals also were compared to California Code of Regulations (CCR) Title 22 Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC). Sample results are presented in Table 1. Analytical laboratory reports are included in Appendix A. Pothole locations are presented on Plate 5.

Lead was detected at concentrations exceeding both the residential and industrial ESLs of 80 and 320 milligrams per kilogram (mg/kg) in 22 of 59 discrete samples analyzed and in three of nine composite samples analyzed. Of those samples 12 exceeded the TTLC of 1000 mg/kg. Selected samples where the metals concentration exceeded 10 times the STLC were analyzed for soluble lead. Seven of the 11 samples analyzed for soluble lead exceeded the STLC of 5 mg/l. Seven samples also were analyzed for TCLP lead as shown on Table 2. TCLP lead was not detected above 5 mg/l. Metal distributions are illustrated on Plate 5.

Nickel was detected in soil sample PH4-1' at a concentration exceeding both ESLs. Cobalt was detected in soil samples PH-14, and PH-16 at a concentration exceeding the residential ESL and in PH-13 at a concentration exceeding the residential and industrial ESLs. Zinc was detected in soil samples PH4-4', PH5-2', PH11-2.5', PH12-2.5' PH14-4', and PH16-2.5' at concentrations exceeding both ESLs. These metals were not detected at concentrations exceeding the TTLC or 10 times the STLC. No other metals were detected above any of the screening concentrations in soils samples collected during this sampling event.

No VOCs, SVOCs, or PCBs were detected above laboratory reporting limits in the composite samples analyzed. Low concentrations of petroleum hydrocarbons were detected in composite samples as presented in Table 2. Residential and industrial ESLs for motor oil were exceeded in initial discrete samples but not in the composite samples.

5.0 DISCUSSION

The potholing exploration program, in addition to previous soil sampling data has confirmed the hypothesis that elevated metals occur at the Site and the source of those metals is debris that was placed at the Site in the past. The main constituent of concern is lead, although there are some elevated concentrations of cobalt, nickel and zinc that for the most part occur with the lead. Minor incidental heavy petroleum hydrocarbons also occur with the debris. There is one location that appears to have a cobalt concentration above its residential ESL without elevated lead. The source of the cobalt is not clear. Only lead has concentrations that exceed its TTLC or STLC. The TCLP for lead was not exceeded.

In the State of California if a constituent exceeds its STLC or TTLC it is considered a California Hazardous Waste for the purposes of disposal. If it also exceeds the TCLP it would be considered a RCRA Hazardous Waste, but the lead TCLP was not exceeded. Based on the potholing exploration and soil sampling results it can be stated that the elevated lead occurs exclusively within the debris, and has not leached into soil below the debris (based on low concentrations of lead in samples collected below the debris). Field observations indicate that the debris occurs typically at a depth of 2.5 feet bgl, although it can be shallower in some locations. Also the debris layer varies from one to three feet thick but is typically approximately 2 feet thick.

The distribution of the lead impacted debris as shown on Plate 5 was interpreted by using the analytical data, field observations, and examining aerial photographs from 1953 and particularly 1965. The boundaries of each impacted area are estimated based on looking for boundaries of what appeared to be disturbed soil in the historic photographs. These boundaries are estimates and some areas are uncertain as indicated by question marks on Plate 5. Despite the uncertainties CKG has calculated approximate volumes of debris that may exist for the waste. These are very rough estimates and could be refined with additional data.

California Hazardous Waste (red hatches on Plate 5):

Total Area (ft ²)	33,000 ft ²
Total Volume (ft ³)	66,000 ft ³
Total Volume (yards ³)	2,444 yd ³
Total Tonnage (1.5x yd ³)	3,666 tons

Non Hazardous Soil to be Disposed to meet Residential ESL

Total Area (ft ²)	13,500 ft ²
Total Volume (ft ³)	27,000 ft ³
Total Volume (yards ³)	1,000 yd ³
Total Tonnage (1.5x yd ³)	1,500 tons

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the potholing exploration and soil sampling results the following conclusions and recommendations can be made:

6.1 CONCLUSIONS

This potholing exploration and soil sampling event has confirmed the approximate vertical and lateral extents of the fill and the associated metals in it.

Based on the results of this sampling approximately 3,666 tons of California Hazardous Waste exists at the Site and another 1500 tons of material exceed the residential ESL.

The exact extent of metals impacts are uncertain and could be refined with additional sampling.

Although there are some uncertainties in the exact volumes of affected materials there is sufficient information to plan and implement a soil remediation project depending on Baywood's proposed future use of the property.

6.2 RECOMMENDATIONS

CKG recommends that Baywood LLC. Submit this report to SCEHD so that they can reopen a case and provide regulatory oversight with respect to future work done at the site.

In addition to providing this document to the SCEHD, Baywood LLC should meet with SCEHD to discuss next steps for the site and prepare a Corrective Action Plan to mitigate the elevated metals at the site.

7.0 REFERENCES

AEI Consultants, *Draft Phase II Subsurface Investigation, 2592 Lakeville Highway, Petaluma, California*, September 2, 2014.

California Regional Water Quality Control Board – San Francisco Bay Region, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Final*, December 2013.

CKG Environmental, Inc., 2015 *Technical Memorandum, Summary of Soil Sampling to Confirm AEI findings at PA-3, 2592 Lakeville Highway, Petaluma, CA*, March 13, 2015.

California Regional Water Quality Control Board (RWQCB). 2013 *Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, Interim Final*. December 2013.

Delta Environmental Consultants, Inc. (Delta).1996.*Monitoring Well Installation and Ground Water Sampling Results*. December 3, 1996

Delta Environmental Consultants, Inc. (Delta).1997.*Well Destruction Report*. June 9, 1997

Delta Environmental Consultants, Inc. (Delta).2000.*Appendix B Closure Report*, Darling International, Inc., Former Royal Tallow & Soap Company Property, 2592 Lakeville Highway, Petaluma, California. March 30, 2000.

Duvergé, Dylan Jacques, *Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region*, Masters Thesis, San Francisco State University, 2011.

Ecology and Environmental, Inc. (EEI). 1990. *Royal Tallow and Soap Company, Petaluma, California, Underground Storage Tank Site Characterization Report*. August 14, 1990.

Ecology and Environmental, Inc. (EEI). 1991. *Royal Tallow and Soap Company, Petaluma, California, Supplemental Site Characterization Report*. August 23, 1991.

MFG, Inc.2000. *Remediation Work Plan, Former Royal Tallow and Soap Facility, 2592 Lakeville Highway, Petaluma, California*. October 25, 2000.

Risk-Based Decisions (RBD). 1996. *Risk-Based Corrective Action Report for the Former Royal Tallow and Soap Company Site in Petaluma, California*. January 29, 1996

Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD). 2000a. Letter to Darling International, Inc. -*Subject: 2592 Lakeville Highway, Petaluma-Leaking Underground Storage Tank Site*, [SCDHS-EHD Site# 1359, SFBRWQB Site #49-0142}. April 20, 2000.

Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD). 2000b. Letter to Darling International, Inc. -*Subject: 2592 Lakeville Highway, Petaluma-*

Leaking Underground Storage Tank Site, [SCDHS-EHD Site # 1359, SFBRWQB Site #49-0142]. October 30. 2000.

Sonoma County Department of Health Services, Environmental Health Division (SCDHS-EHD). 2001. Letter to Darling International, Inc. -*Subject: 2592 Lakeville Highway, Petaluma - Leaking Underground Storage Tank Site*, SCDHS-EHD Site # 1359, SFBRWQB Site #49-0142, Review of Analytical Test Results for Excavation of Contaminated Soil and Exploratory Step-out Borings. June 11. 2001,

8.0 LIMITATIONS

CKG Environmental, Inc. prepared this report in accordance with generally accepted standards of care which exist in Northern California at this time. It should be recognized that definition and evaluation of geologic and environmental conditions is a difficult and an inexact science.

Conclusions and recommendations presented in this report are based on the results of excavating potholes and collecting soil samples and quantitative analysis of those samples conducted by McCampbell Analytical. Only work described herein was performed. As such CKG cannot render opinions on issues not resulting directly from the work performed.

Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present. More extensive studies, including additional subsurface investigations, may be performed to reduce uncertainties. If the client wishes to reduce the uncertainties of this investigation, CKG should be notified for additional consultation. No warranty, expressed or implied, is made.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both onsite and offsite) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify CKG of such intended use. Based on the intended use of the report, CKG may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release CKG from any liability resulting from the use of this report by any unauthorized party.

TABLES

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead	
Previous Investigation Data																					
PA-3	6/18/14	22							280	930								2000			
CS PA-3	2/12/15	18							270	1800								4300			
CS PA-3N	2/12/15	20							810	1400								3400			
CS PA-3SW	2/12/15	24							1300	2800								3900			
CS PA-3SE	2/12/15	25							670	1500								3600			
Data Collected During Potholing Investigation																					
PH1-1'	4/28/15	<0.5	1.9	170	0.56	<0.25	34	7.9	18	6.40	0.17	<0.5	40	<0.5	<0.5	<0.5	30	31			
PH1-2.5'	4/28/15	2.6	6.7	180	<0.5	1.7	45	14	49	250	0.19	0.74	38	<0.5	<0.5	<0.5	32	620	2.8	<0.2	
PH1-4'	4/28/15	<0.5	4.0	310	0.92	0.28	62	9.4	33	20	0.10	0.69	44	<0.5	<0.5	<0.5	57	81			
PH1-5'	4/28/15	<0.5	6.9	180	0.62	<0.25	34	7.1	24	16	<0.05	0.54	29	<0.5	<0.5	<0.5	33	58			
PH2-2.5"	4/28/15									1300										<0.2	
PH3-1.5'	4/28/15	<0.5	2.8	100	<0.5	<0.25	34	10	15	6.6	0.098	<0.5	37	<0.5	<0.5	<0.5	30	29			
PH3-3'	4/28/15	3.9	15	270	<0.5	2.1	65	13	170	520	0.63	3.3	78	<0.5	<0.5	<0.5	45	690	18		
PH3-4'	4/28/15	<0.5	1.8	38	0.52	<0.25	40	6.7	28	9.2	0.13	0.6	37	<0.5	<0.5	<0.5	29	54			
PH4-1'	4/28/15	<0.5	1.8	190	0.58	<0.25	32	7.2	18	6.3	0.15	<0.5	335	<0.5	<0.5	<0.5	26	29	1.7 Ni		
PH4-2.5'	4/28/15	0.65	6.6	160	0.58	0.27	41	14	32	50	0.12	0.63	44	<0.5	<0.5	<0.5	36	200			
PH4-4'	4/28/15	2.5	6.5	180	0.58	0.86	53	13	94	240	0.36	0.67	50	<0.5	<0.5	<0.5	46	1100	4.8		
PH4-5'	4/28/15	<0.5	9.8	150	0.84	<0.25	40	11	22	8.7	0.062	0.53	44	<0.5	<0.5	<0.5	52	36			
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600			
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600			
TTLCL		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000		
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5		

mg/kg: milligrams per kilogram

- Highlighted data exceeds the ESL
- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLCL

TABLE 1
Concentration of Metals in Soil Samples
2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH5-2'	4/28/15	50	7.4	320	<0.25	2.4	54	11	210	1900	0.42	0.7	58	<0.5	0.69	<0.5	39	1300	110	0.77
PH5-4'	4/28/15	1.8	2.4	220	0.88	0.54	48	12	41	43	0.28	<0.5	55	<0.5	<0.5	<0.5	38	160		
PH5-5'	4/28/15	<0.5	3.2	140	0.63	<0.25	38	7.1	18	7.8	<0.05	<0.5	36	<0.5	<0.5	<0.5	43	25		
PH6-1'	4/28/15	<0.5	3.7	140	0.69	<0.25	43	12	24	13	0.14	<0.5	41	<0.5	<0.5	<0.5	39	44		
PH6-2.5'	4/28/15	1.9	4.4	160	0.56	0.83	54	15	55	120	0.14	<0.5	65	<0.5	<0.5	<0.5	37	330	3.0	
PH6-3.5'	4/28/15	<0.5	4.7	110	0.84	0.32	53	9.6	34	10	0.19	0.83	55	<0.5	<0.5	<0.5	45	72		
PH6-4.5'	4/28/15	<0.5	6.5	170	0.64	<0.25	34	25	19	10	<0.05	0.54	37	<0.5	<0.5	<0.5	35	27		
PH7-2'	4/28/15	0.56	3.6	190	0.55	<0.25	64	18	29	14	0.094	<0.5	77	<0.5	<0.5	<0.5	46	53		
PH7-3'	4/28/15	<0.5	2.6	140	0.67	<0.25	40	18	23	11	0.11	<0.5	50	<0.5	<0.5	<0.5	39	41		
PH7-4'	4/28/15	<0.5	5.9	100	0.51	<0.25	38	5.1	21	5.7	0.081	2.3	26	<0.5	<0.5	<0.5	38	37		
PH8-2'	4/28/15	<0.5	3.3	180	0.67	<0.25	43	13	22	9.9	0.14	<0.5	46	<0.5	<0.5	<0.5	37	37		
PH8-4'	4/28/15	<0.5	4.7	66	0.5	<0.25	44	9.1	25	19	0.19	<0.5	43	<0.5	<0.5	<0.5	39	78		
PH9-2'	4/28/15	<0.5	2.1	110	0.57	<0.25	35	8.8	17	6.8	0.088	<0.5	35	<0.5	<0.5	<0.5	28	28		
PH9-4'	4/28/15	1.2	7.9	160	0.7	0.44	73	12	56	59	0.41	0.97	68	<0.5	<0.5	<0.5	60	220		
PH10-2'	4/28/15	0.72	7.0	250	0.8	0.43	54	17	38	38	0.18	0.66	65	<0.5	<0.5	<0.5	53	210		
PH10-4'	4/28/15	1.2	6.8	220	0.66	0.85	64	11	78	66	0.27	0.88	78	<0.5	<0.5	<0.5	55	260		
PH11-1'	4/28/15	<0.5	3.1	210	0.79	<0.25	53	8.7	26	11	0.16	<0.5	47	<0.5	<0.5	<0.5	45	44		
PH11-2.5'	4/28/15	3.5	13	250	0.67	3.5	63	16	140	500	0.94	1.6	70	<0.5	0.51	<0.5	53	1400	41	<0.2
PH11-4'	4/28/15	<0.5	8.9	180	0.65	0.49	78	13	44	24	0.51	0.64	77	<0.5	<0.5	<0.5	61	160		
PH11-5'	4/28/15	<0.5	14	67	0.62	0.32	46	6.9	44	12	0.15	1.9	35	0.57	<0.5	<0.5	49	57		
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTL		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

- Highlighted data exceeds the ESL
- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTL

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH12-1'	4/28/15	<0.5	3.1	290	<1.0	<0.25	52	9.5	25	7.6	0.24	<0.5	52	<0.5	<0.5	<0.5	46	40		
PH12-2.5'	4/28/15	2.3	11	240	<1.0	2.3	57	16	89	290	0.42	1.0	60	<0.5	<0.5	<0.5	46	810	10	<0.2
PH12-3.5'	4/28/15	0.8	4.3	87	<1	1	49	9.2	77	85	0.38	<0.5	50	<0.5	<0.5	<0.5	36	350		
PH12-4.5'	4/28/15	<0.5	2.5	140	<1.0	0.78	25	4.2	30	6.4	0.078	1.0	36	0.7	<0.5	<0.5	31	62		
PH13-2'	4/28/15	<0.5	4.0	110	<1.0	<0.25	32	115	16	14	0.10	0.76	45	<0.5	<0.5	<0.5	33	44		
PH13-4'	4/28/15	<0.5	6.4	160	<1.0	<0.25	31	12	14	5.9	0.056	<0.5	33	<0.5	<0.5	<0.5	45	29		
PH14-1'	4/28/15	0.78	3.5	120	<1.0	2.7	58	14	31	40	0.21	<0.5	53	<0.5	<0.5	<0.5	62	95		
PH14-2.5'	4/28/15	0.62	3.5	180	<0.5	<0.25	50	15	26	21	0.18	<0.5	48	<0.5	<0.5	<0.5	51	80		
PH14-4'	4/28/15	3.8	8.2	160	<1.0	2.3	58	15	92	390	0.45	1.5	64	<0.5	<0.5	<0.5	62	840	15	0.87
PH14-5'	4/28/15	<0.5	8.1	210	<1.0	<0.25	41	44	17	8.9	0.051	0.93	44	<0.5	<0.5	<0.5	59	33		
PH15-2'	4/28/15	<0.5	6.9	160	<1.0	<0.25	53	14	22	54	0.19	<0.5	59	<0.5	<0.5	<0.5	45	77		
PH15-4'	4/28/15	<0.5	8.5	180	<1.0	<0.25	43	24	27	27	0.18	1.4	53	<0.5	<0.5	<0.5	55	210		
PH15-5'	4/28/15	<0.5	9.8	160	<1.0	<0.25	48	12	20	7.4	0.065	<0.5	38	<0.5	<0.5	<0.5	67	35		
PH16-1'	4/28/15	3.3	48	250	<1.0	0.8	60	19	130	300	0.29	1.7	59	<0.5	<0.5	<0.5	59	490		
PH16-2.5'	4/28/15	5.3	6.4	240	<0.5	1.9	54	13	130	400	0.20	0.56	56	<0.5	<0.5	<0.5	44	960	27	<0.2
PH16-4'	4/28/15	3.5	5.5	240	0.59	0.83	50	12	76	160	0.46	<0.5	49	<0.5	<0.5	<0.5	53	480		
PH16-5'	4/28/15	<0.5	8.0	310	0.66	<0.25	40	36	19	9.9	0.050	0.56	42	<0.5	<0.5	<0.5	54	30		
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTL		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

- Highlighted data exceeds the ESL
- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTL

TABLE 1
 Concentration of Metals in Soil Samples
 2592 Lakeville Highway, Petaluma, CA

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Lead	TCLP Lead
PH17-1'	4/28/15	0.70	3.9	160	<0.5	<0.25	79	13	29	7.8	0.059	<0.5	75	<0.5	<0.5	<0.5	51	45		
PH17-2.5'	4/28/15	0.56	3.2	270	0.75	0.66	55	12	30	40	0.25	<0.5	66	<0.5	<0.5	<0.5	42	170		
PH17-4'	4/28/15	0.89	6.4	160	0.73	1.3	59	14	63	23	0.24	1.3	59	<0.5	<0.5	<0.5	63	470		
PH17-5'	4/28/15	<0.5	4.7	110	0.71	<0.25	43	5.6	13	7.9	<0.05	0.71	28	<0.5	<0.5	<0.5	47	30		
PH18-1'	4/28/15	2.3	9.6	440	0.53	<0.25	47	16	52	99	0.12	1.1	57	<0.5	<0.5	<0.5	63	92		
PH1,6,11,17-1' comp	4/28/15		7.5	180		1.6	45			250	0.17			<0.5	<0.5					<0.2
PH1,6,11,17-2.5' comp	4/28/15		6.6	180		<0.25	35			17	<0.05			<0.5	<0.5					
PH1,11,17,4' PH6-3.5' comp	4/28/15		3.3	110		<0.25	40			7.5	0.12			<0.5	<0.5					
PH3-3', 18-3', 12-2.5' comp										180										
PH1,11,17,5' PH6-4.5' comp	4/28/15		7.4	140		<0.25	43			8.1	0.054			<0.5	<0.5					
PH2,4,14,16-1' comp	4/28/15		3.9	240		0.05	67			22	0.23			<0.5	<0.5					
PH4,14,16-2' PH2-2.5' comp	4/28/15		6.2	150		1.1	45			270	0.21			<0.5	<0.5					12.00
PH2,4,14,16-4' comp	4/28/15		1.8	42		0.28	41			10	0.16			<0.5	<0.5					
PH2,4,14,16-5' comp	4/28/15		5.3	130		<0.25	37			8.4	0.079			<0.5	<0.5					
Res. ESL		20	11*	750	4.0	12	1000	23	230	80	6.7	40	150	10	20	0.78	200	600		
Ind. ESL		20	11*	1500	8	12	2500	80	230	320	10	40	150	10	40	10	200	600		
TTLIC		500	500	10,000	75	100	2500	8,000	2500	1000	20	3500	2000	100	500	700	2400	5000	1000	
STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1.0	5	7	24	250	5	

mg/kg: milligrams per kilogram

- Highlighted data exceeds the ESL
- Highlighted data exceeds the industrial/commercial ESL
- Highlighted data exceeds the STLC or TTLIC

TABLE 2
 Petroleum Hydrocarbon Concentrations
 2592 Lakeville Highway
 Petaluma, CA

Sample ID	Sample Date	TPH _g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TPH _d	TPH _m
Previous Investigation Data									
PA-3	6/18/14	<1	<0.005	<0.005	<0.005	<0.005	<0.05	89	660
CS PA-3	2/12/15								1000
CS PA-3N	2/12/15								150
CS PA-3SW	2/12/15								130
CS PA-3SE	2/12/15								590
Data Collected During Potholing Investigation									
PH1,6,11,17-1' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH1,6,11,17-2.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH1,11,17,4' PH6-3.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH3-3', 18-3', 12-2.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH1,11,17,5' PH6-4.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
PH2,4,14,16-1' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	2.10	5.6
PH4,14,16-2' PH2-2.5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	1.30	21
PH2,4,14,16-4' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	2.80	30
PH2,4,14,16-5' comp	4/28/15	<1	<0.005	<0.005	<0.005	<0.005	<0.05	<1	<5
Res. ESL		100	0.74	9.3	4.7	11	8.4	100	100
Ind. ESL		500	1.2	9.3	4.7	11	8.4	110	500

all data in mg/kg: milligrams per kilogram
 If blank analyte was not analyzed.

Highlighted data exceeds the ESL
 Highlighted data exceeds the industrial/commercial ESL

PLATES

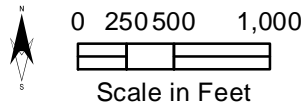


Drawn by P. Dellavalle February 2015. Base layers are aeriels provided by ArcGIS Online.



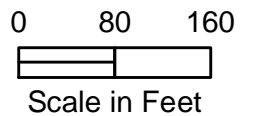
Explanation

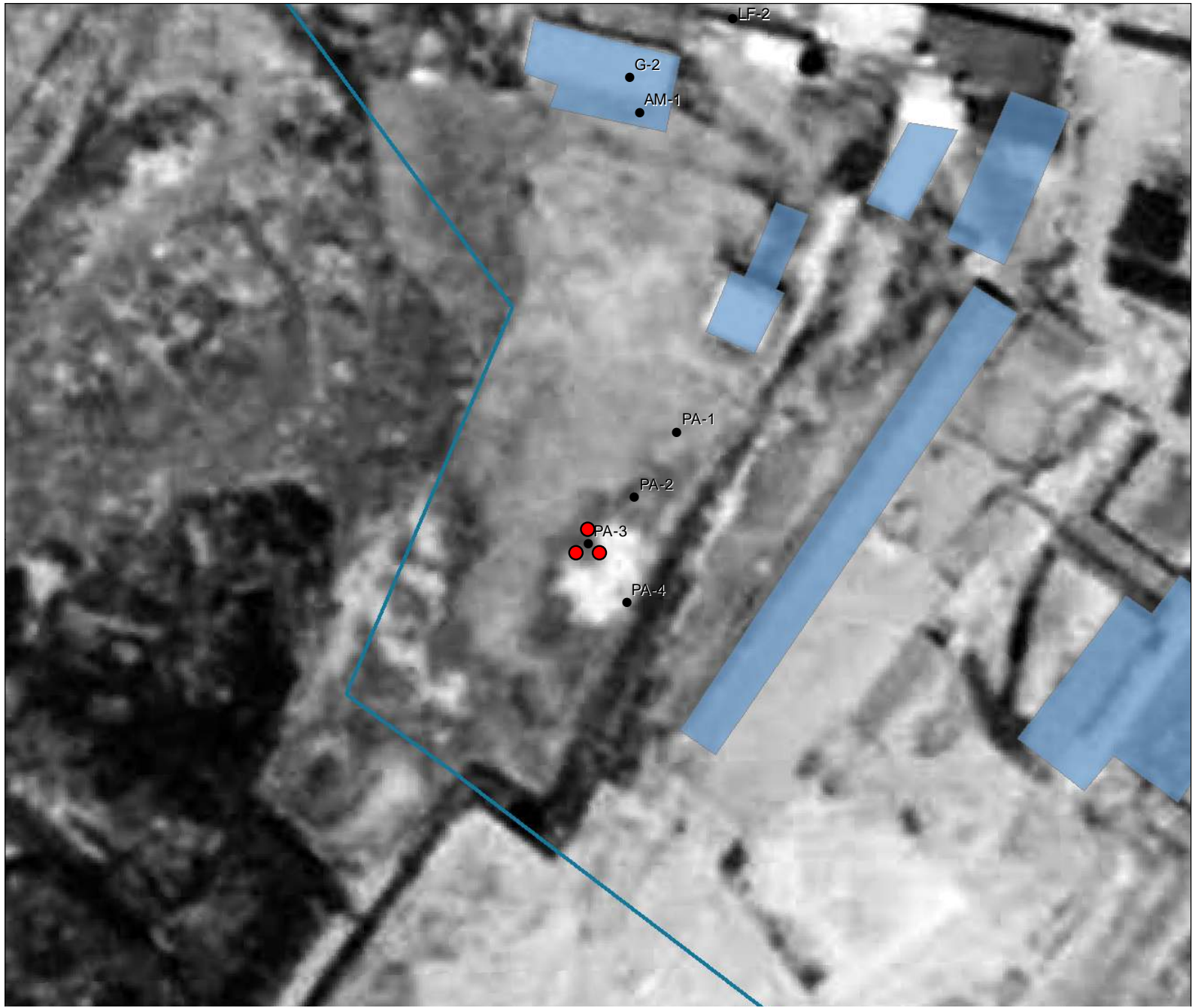
- Site Boundary
- Railroad
- Parcels



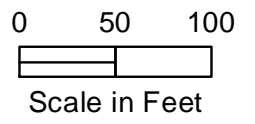


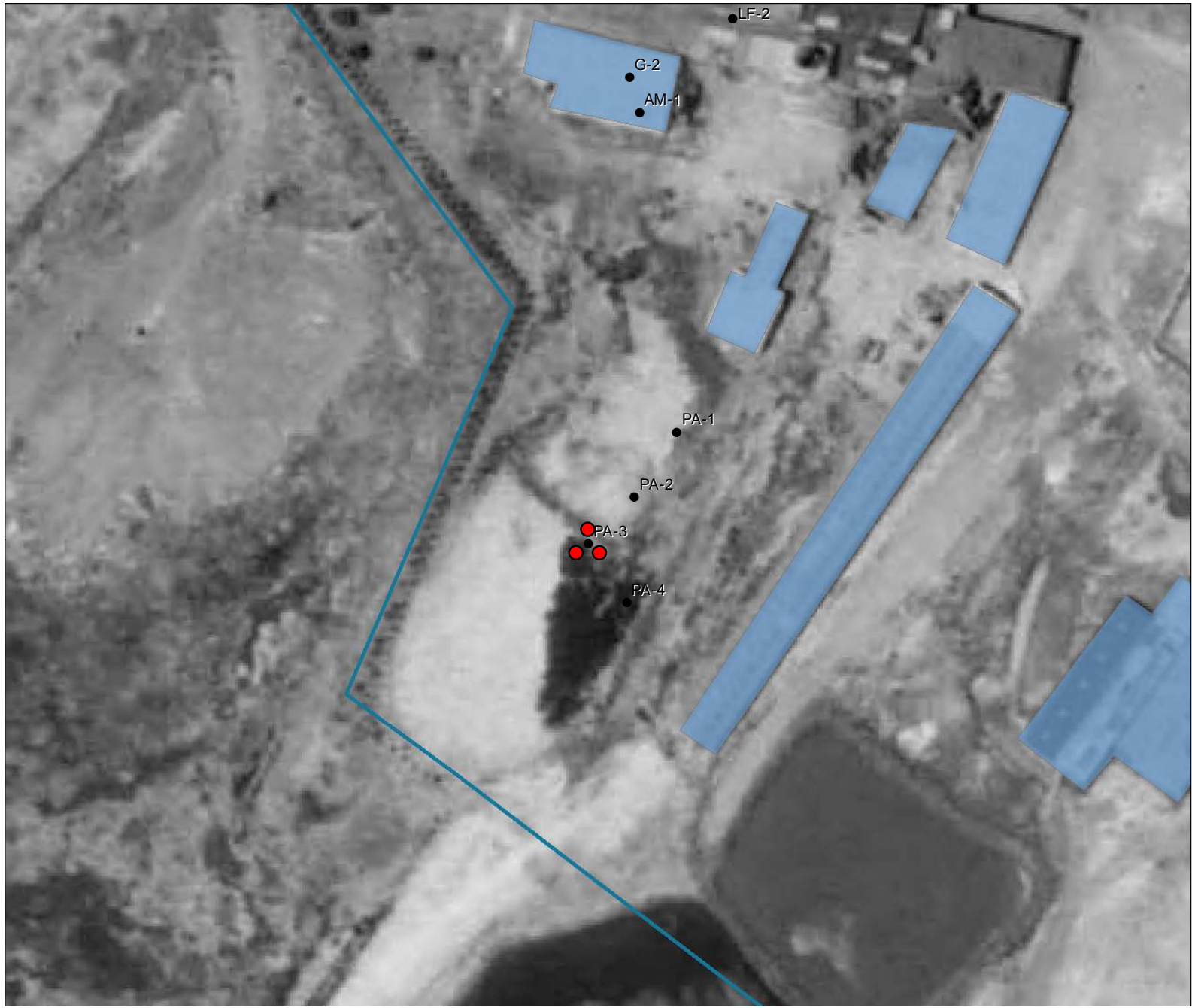
- Explanation**
- Previous Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Excavation Area
 - Site Boundary



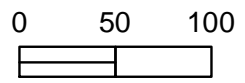


- Explanation**
- Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Site Boundary





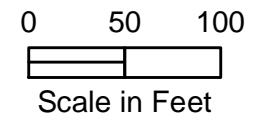
- Explanation**
- Sample Location
 - Confirmation Sample Location
 - Historic Building Footprints
 - Site Boundary



Scale in Feet



- Explanation**
- Sample Location
 - Pot Hole Location
 - Pot Hole Location (No Visible Debris)
 - Confirmation Sample Location
 - ▨ Pb Concentrations > TTLC or STLC
 - ▨ Metal Concentration > Res. ESL
 - Pb Concentration > 80 ppm
 - Historic Building Footprints
 - Site Boundary





AEI Consultants

Environmental & Engineering Services

September 2, 2014

PHASE II SUBSURFACE INVESTIGATION

Property Identification:

2592 Lakeville Highway
Petaluma, California

AEI Project No. 327703

Prepared for:

DeNova Homes, Inc.
1500 Willow Pass Court
Concord, California 94520

Prepared by:

AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597
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Environmental &
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Local Solutions

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APPENDICES

Appendix A	Permits
Appendix B	Boring Logs
Appendix C	Laboratory Analytical Reports



AEI Consultants

Environmental & Engineering Services

September 2, 2014

DeNova Homes, Inc.
Attn: Mr. Trent Sanson
1500 Willow Pass Court
Concord, California 94520

Subject: Phase II Subsurface Investigation
2592 Lakeville Highway
Petaluma, California
AEI Project No. 327703

Dear Mr. Sanson:

AEI Consultants (AEI) is pleased to provide this report which describes the activities and presents a summary of the results of the Phase II Subsurface Investigation performed at the above referenced subject property (Figure 1). This investigation was completed in general accordance with the authorized scope of services and limitations outlined in AEI proposal number 36788.

1.0 SITE DESCRIPTION

The subject property consists of vacant land located to the south of Lakeville Highway and southeast of Casa Grande Road in a mixed commercial and residential area of Petaluma, California (Figure 2).

The subject property totals approximately 13 acres and is surrounded by a barbed-wire security fence. The property is not currently improved with any permanent structures, but it occupied part-time by a caretaker living in a trailer home parked on-site in the northeast corner of the property. Two large mounds of fill material (primarily soil and rock debris), which reportedly originated from an off-site source, are located along the northern boundary of the property. In addition, a pile of concrete construction debris and a smaller pile of Class II Aggregate (concrete and asphalt) are located in the central portion of the property.

The subject property lies at an elevation of about 10 feet above mean sea level. The nearest surface water body is the Petaluma River, located approximately 0.2 miles to the west-southwest. The land surface slope and direction of groundwater flow beneath the subject property are generally towards the Petaluma River. A wetland area lies between the subject property and the Petaluma River.

Based on a review of the United States Geological Survey (USGS) Geologic Map of Parts of Sonoma County, California, the surficial geology consists of artificial fill material and alluvium overlying fine-grained marine and freshwater marsh deposits. Groundwater generally occurs

between 1 and 7 feet below ground surface (bgs). Additional information related to site geology and groundwater conditions are provided in Section 4.1, below.

2.0 BACKGROUND

A Phase I Environmental Site Assessment (ESA) was performed by AEI as detailed in a report dated March 24, 2014 (AEI Project Number 327703). Based on the findings of the Phase I ESA, the subject property was occupied by the Royal Tallow and Soap Company (RTSC) facility from at least 1955 through 1986, when operations ceased. The property has been vacant land since the former facility buildings were demolished in 2008. The Phase I ESA documented multiple recognized environmental conditions (RECs) on the subject property, which are discussed further below.

- Records on file with the Sonoma County Environmental Health Department (SCEHD) indicate that former Northwestern Pacific Railroad spur and right of way was located along northern property boundary from at least 1914 until 1980 (Figure 2). According to a representative of the subject property, Mr. Patrick Imbimbo, the railroad spur was removed in 2008. The railroad spur was identified as a REC due to the historical practice of applying of oils that may have contained polychlorinated biphenyls (PCBs), herbicides and arsenic for pest and weed control. There is also the potential presence of creosote in railroad ties as well as issues related to the historical practice of using coal cinders for track fill material which can contain elevated levels of heavy metals.
- Based on an interview with former RTSC employee, Mr. Pete Terribilini, the facility included a clarifier and a series of waste water disposal ponds. According to Mr. Terribilini, the RTSC facility was washed down daily, and water from this process flowed into a sump located in the southern portion of the facility. The water from this cleaning process was reportedly filled with "tallow and grease", which were skimmed off the sump daily and returned to the facility for reuse in the manufacturing process. The remaining waste water flowed into waste water ponds on the southern portion of the subject property (Figure 2). Mr. Terribilini stated that he had no knowledge of other chemicals or solvents used on-site during the rendering processes or cleaning/maintenance activities. Although the waste water likely contained mostly organic materials, the sump and waste water ponds were identified as RECs due to the potential that that hazardous materials could have been present in the waste water and been deposited in the sump and/or waste water disposal ponds.
- According to a map on file with the SCEHD, two septic tanks were located east adjacent to the main RTSC rendering plant. The associated leach field extended to the southwest. It is unclear whether the septic system was used solely for restroom waste disposal, or if other waste water was discharged into the system. The septic tank and leach field were identified as RECs due to the long industrial nature of the property, the lack of regulatory oversight, and the potential that hazardous materials could have entered the septic system and leach field.
- During its operational history, an auto maintenance garage with two underground storage tanks (USTs) was located on the northwestern portion of the property. Based on information available in the Case Closure Summary and Remedial Action Completion Certificate on file with the State Water Resources Control Board (SWRCB) GeoTracker

online database, one 1,000-gallon UST and one 2,000-gallon UST, both containing regular unleaded gasoline, were removed from the northwestern portion (west of the RTSC facility buildings) of the subject property on June 30, 1990. During tank removal activities, holes were observed in both USTs and the backfill was noted as contaminated around both USTs. Gasoline-related petroleum hydrocarbons were detected in soil and groundwater samples during removal of the former USTs. Remediation activities conducted to address the impacted media included the excavation of approximately 2,400 cubic yards of contaminated soil followed by installation of a 10 groundwater well monitoring network, and extraction, treatment, and disposal of approximately 88,000-gallons of groundwater. Upon site closure, all contaminants in groundwater were below laboratory reporting limits except 1,2-dichloroethane (1,2-DCA) which was detected at 0.0016 parts per million (ppm). However, elevated levels of gasoline constituents were reported as remaining in soils in the vicinity of the USTs. It was also noted that soil and groundwater were not tested for diesel or motor oil.

Additionally, during remediation of soils in the area of the former USTs, soil borings were advanced and samples were taken from the area of the auto maintenance garage which indicated high levels of total petroleum hydrocarbons as gasoline (TPH-g) in soil. However, it does not appear that the soils in this area were excavated, and it appears likely that contamination remains in place.

As a stipulation for granting Site closure, the SCEHD stated that future site development should address residual soil contamination in the vicinity of the former UST area.

- According to the property contact Mr. Patrick Imbimbo, fill material from an off-site source has been stockpiled on the northern portion of the subject property. Mr. Imbimbo stated that the soil was deemed as "clean" before it was deposited on the subject property, and that there are plans to use this fill material redevelopment of the subject property. However, no information has been identified to document the origin of the material. Likewise, no soil testing data was identified to verify that there were contaminants in the material.

Given the potential environmental concerns related to the RECs described above and that the property is under consideration for residential development, AEI recommended a subsurface investigation evaluate potential impacts to the subsurface of the subject property, and to assess the suitability of the on-site fill material for residential use.

3.0 INVESTIGATION EFFORTS

AEI was retained to perform additional investigation activities at the subject property, including the collection of soil, soil gas, and groundwater samples to evaluate environment conditions on the subject property. All work was performed under the oversight of a California-licensed professional geologist.

AEI performed a site inspection with Mr. Patrick Imbimbo on June 9, 2014 to measure the stockpiled soils and confirm access to soil boring locations. Based on the results of the site inspection, it was determined that two stockpiles of soil are present along the northern boundary of the property (Figure 3). Field measurements indicate that the stockpiles measure

between 10 and 12 feet in thickness and that the total volume of soil present in the stockpiles is approximately 18,000 cubic yards (western stockpile) and 7,000 cubic yards (eastern stockpile).

Additionally, Mr. Imbimbo stated that the former UST area had been excavated to a depth of 12 feet bgs during removal of the tanks and that following removal of the tanks, the impacted soil was used to backfill the excavation. An employee of Mr. Imbimbo had staked out the approximate area of excavation, which generally corresponded with maps and other documentation provided in the Phase I ESA.

Based on information gathered during the site inspection, it was determined that the former UST area, the former septic tank and leach field, and a significant portion of the footprint of the former facility buildings are located beneath the western stockpile, which is estimated at 12 feet in thickness. Where appropriate, soil samples collected to characterize these areas have been labeled as "SP" (stockpile) samples to account for the thickness of the stockpile material above original ground surface. Thus, where borings were completed through the stockpile, the thickness of the stockpiled soil can be subtracted from the total drilling depth to estimate the soil and groundwater sample depth relative to estimated original ground surface.

3.1 Health and Safety Plan

A site-specific health and safety plan was prepared, reviewed by onsite personnel, and kept onsite for the duration of the fieldwork.

3.2 Permitting and Utility Clearance

Drilling permits were obtained from SCEHD for this investigation (Appendix A). The public underground utility locating service Underground Service Alert (USA) was notified to identify public utilities in the work area. Soil borings were advanced to approximately 5-feet bgs with a hand-auger before advancing drill rig tooling to clear for utilities.

3.3 Drilling and Sample Collection

On June 17 through June 19, and June 23, 2014, a total of 62 soil samples were collected from the subject property (Figures 2 and 3). Soil sampling was conducted using a combination of hand-tools and direct-push drilling. The direct-push borings were performed by Environmental Control Associates (ECA) of Aptos, California using GeoProbe[®] 6600 and 5410 truck-mounted direct-push drilling rigs.

Direct-push borings were completed using 2.25-inch outer diameter rods. Soil cores were collected continuously from the borings by advancing the rods equipped with acetate sample liners in approximately 4-foot intervals. After each interval, the core was retrieved to the surface, the core barrel was disassembled, and the sample liner was transferred to the onsite geologist. The soil borings were logged using the Unified Soil Classification System. A photo ionization detector (PID) was used to field screen the soil samples for the presence of volatile organic compounds (VOCs). PID readings were included on the boring logs (Appendix B).

Following collection, the soil samples were labeled and placed into an iced cooler for transfer to the analytical laboratory. Following soil sample collection, groundwater samples were collected from borings PA-1 through PA-4, PB-1, SMP-1, ST-1, LF-1 and LF-2, AM-1 through AM-3, UST-1 through UST-6, and BLDG-1 through BLDG-3. Groundwater was collected by placing a temporary polyvinyl chloride (PVC) casing inserted into the borehole, allowing the water to

recharge in the borehole, then collecting a groundwater sample using a peristaltic pump. Following collection, the samples were labeled and placed into an iced cooler for transfer to the analytical laboratory.

Soil and groundwater samples were delivered under appropriate chain-of-custody documentation to McCampbell Analytical, Inc. (MAI) of Pittsburg, California for analysis. Soil gas samples were transported by FedEx under appropriate chain-of-custody documentation to Eurofins Air Toxics of Folsom, California for analysis. Laboratory analytical documentation is provided in Appendix C.

All soil sample locations were marked with labeled wooden stakes. Down-hole equipment was properly decontaminated between successive borings. The location and purpose of each boring, along with a summary of samples analyzed, is discussed briefly below.

Former Railroad Spur Area

On June 23, 2014, three borings (RS-1 through RS-3) were advanced along the former railroad spur on the northern portion of the subject property. Soil samples were collected from these borings using a shovel and/or hand-auger. Three soil samples (one each from borings RS-1 through RS-3) were analyzed for the following:

- TPH Multi-range by EPA Method 8015M
- Organo-chlorine Pesticides and PCBs by EPA Method 8081A/8082
- Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270C
- Chlorinated Herbicides by EPA Method 8151A
- PAHs/PNAs by EPA Method 8270C-SIM
- CAM 17 Metals by EPA Method 6020

Waste Water Ponds Area

On June 17, 2014, six borings were advanced in the area of the waste water ponds (PA-1 through PA-4, PB-1, and PB-2) for the collection of soil and groundwater samples. Six soil samples (one each from borings PA-1 through PA-4, PB-1 and PB-2) and two groundwater samples (PA-3 and PB-1) were analyzed for the following:

- TPH Multi-range by EPA Method 8015M
- VOCs by EPA Method 8260B
- CAM 17 Metals by EPA Method 6020

Sump

On June 19, 2014, one boring was advanced in the area of the process sump (SMP-1) for the collection of soil and groundwater samples. One soil sample and one groundwater sample (SMP-1) were analyzed for the following:

- TPH Multi-range by EPA Method 8015M
- VOCs by EPA Method 8260B
- CAM 17 Metals by EPA Method 6020

Septic Tanks and Leach Field Areas

On June 19, 2014, three borings were advanced in the area of the septic tank (ST-1) and septic tank leach field (LF-1 and LF-2) for the collection of soil and groundwater

samples. Three soil samples and three groundwater samples (one soil and one groundwater sample from each boring) were analyzed for the following:

- TPH Multi-range by EPA Method 8015M
- VOCs by EPA Method 8260B
- CAM 17 Metals by EPA Method 6020

Former Auto Maintenance Area

On June 17, 2014, three direct-push borings were advanced within the area of the former auto maintenance area (AM-1 through AM-3) for the collection of soil and groundwater samples. Three soil samples and three groundwater samples (one soil and one groundwater sample from each from boring) were analyzed for the following:

- TPH Multi-range by EPA Method 8015M
- VOCs by EPA Method 8260B

Former UST Area

On June 17, 2014, six direct-push borings were advanced around the area of the former USTs (UST-1 through UST-6) for the collection of soil and groundwater samples. Twelve soil samples (two each from borings UST-1 through UST-6) were analyzed for:

- TPH Multi-range by EPA Method 8015M
- Methyl tert-Butyl Ether (MTBE) and Benzene, Toluene, Ethylbenzene, and Xylenes (MBTEX) by EPA Method 8260B

Six groundwater samples (one each from borings UST-1 through UST-6) were analyzed for:

- TPH Multi-range by EPA Method 8015M
- VOCs by EPA Method 8260B

Former Facility Building Footprint Area

On June 19, 2014, three direct-push borings (BLDG-1 through BLDG-3) were advanced within the footprint of the former RTSC facility buildings for the collection of soil and groundwater samples. Three soil samples and three groundwater samples (one soil and one groundwater sample from each boring) were analyzed for:

- TPH Multi-range by EPA Method 8015M
- CAM 17 Metals by EPA Method 6020B

Soil Stockpile Sampling

Between June 17 and 19, 2014, a total of 26 soil samples were collected from the western stockpile located along the northern portion of the subject property to characterize the material for potential use as on-site fill. The sampling frequency and analyses were selected based on the guidelines outlined in *Information Advisory: Clean Imported Fill Material* by the Department of Toxic Substances Control (DTSC). Twenty-six soil samples collected from nine borings completed in the west stockpile were analyzed for the following:

- TPH Multi-range by EPA Method 8015M
- OC Pesticides and PCBs by EPA Method 8080A
- OP Pesticides by EPA Method 8141
- VOCs by EPA Method 8260
- SVOCs by EPA Method 8270
- Chlorinated Herbicides by EPA Method 8151
- PAHs/PNAs by EPA Method 8270
- CAM 17 Metals by EPA Method 6010
- Asbestos by PLM Carb 435

3.4 Soil Gas Sample Collection

On June 17 through June 19, 2014, soil gas sampling was conducted on the subject property (Figure 2). Six direct-push borings (G-1 through G-6) were advanced for the construction of temporary soil gas probes and subsequent collection of soil gas samples. The sampling was conducted in general accordance with the guidelines outlined in *Advisory: Active Soil Gas Investigations* by the DTSC.

- Probes G-1 and G-2 were advanced within the former auto maintenance area on the northwestern portion of the subject property. These probes were constructed at approximately 3 feet bgs due to the presence of shallow groundwater observed in adjacent soil borings.
- Probes G-3 and G-4 were advanced through the stockpiled soil within the area of the former USTs on the north-northwestern portion of the subject property. The probes were constructed at approximately 5 feet bgs.
- Probes G-5 and G-6 were advanced through the stockpiled soil within the building footprint on the northern portion of the subject property. Probe G-5 was constructed at approximately 5 feet bgs. Due elevated water levels in the area probe G-6 was constructed at 3 feet bgs.

The soil gas probes were constructed of 0.25-inch diameter Teflon tubing connected to a 1-inch disposable plastic probe tip. Per DTSC's guidance, the probe tip was placed in the middle of an annular filter pack composed of approximately 1 foot of sand, sealed with an appropriate amount of dry granular bentonite, and finished to near ground surface with hydrated granular bentonite to just below ground surface.

A vacuum tightness test was performed on the sampling train prior to soil gas sampling using a clean 60-milliliter (mL) syringe. Once the sample train passed the tightness test, 3 volumes of air were purged from the sample train using a dedicated purge canister. The soil gas sample was then collected into a 1-liter Summa canisters equipped with a flow regulator set at 200 mL per minute. A vacuum gauge was used to measure the initial vacuum pressure in the sampling. A leak check was performed by applying a cloth rag with isopropyl alcohol to the sampling train connection points during sampling.

Soil gas sampling equipment was obtained from Eurofins Air Toxics of Folsom, California. Each canister was individually checked, tested by the laboratory for air tightness and proper vacuum and batch certified for purity prior to shipping. Once sampling was completed, each summa canister was sealed with a slight vacuum prior to sealing. Following collection, the samples

were labeled and stored for transfer to the analytical laboratory to be analyzed for TPH-g and VOCs including naphthalene by EPA Method TO-15

3.5 Boring Destruction

Following completion of sample collection and removal of tooling, the borings were backfilled with neat cement grout as required by the permitting agency and completed at the surface with native soil to match the surrounding conditions.

3.6 Investigation Derived Wastes

Investigation derived waste was stored on-site in 5-gallon buckets pending receipt of the analytical data.

4.0 FINDINGS

For the purpose of providing context to the data obtained during this investigation, analytical results are compared to the December 2013 Environmental Screening Levels (ESLs) established by the San Francisco Bay Regional Water Quality Control Board. The ESLs are considered to be conservative. Under most circumstances, and within the limitations described in the ESL guidance document, the presence of a chemical in soil, soil gas or groundwater at concentrations below the appropriate ESL can generally be assumed to not pose a significant threat to human health or the environment. Additional evaluation may generally be required at sites where a chemical is present at concentrations above corresponding appropriate ESL values. In certain cases, several ESLs are available which consider several exposure scenarios, land or groundwater use, and other site characteristics, the selection of which may be a matter for regulatory consideration and professional judgment. While a detailed exposure pathway and risk analysis is outside of the scope of this assessment, several ESLs are included in the Tables to provided added context to the results.

4.1 Geology and Hydrogeology

Native soil encountered in each of the borings generally consisted of clayey silt underlain by a silty sand layer, which is underlain by a hard plastic clay (Appendix B). Soil encountered while drilling through the stockpile was characterized as a mixture of clay, sand, gravel, asphalt pieces, brick debris, and glass fragments. The average thicknesses of the stockpiles ranged between approximately 10 and 12 feet.

Groundwater was encountered in all borings except PB-2. First groundwater was generally encountered in a saturated, silty sand layer in native soil which occurred at an average depth of approximately 12 feet below original ground surface. Groundwater then rose and equilibrated at to depths ranging from approximately 3 to 8 feet below original ground surface.

4.2 Analytical Results

The analytical results of soil samples from the Site are summarized in Tables 1 through 4, groundwater samples in Tables 5 and 6, and soil gas samples in Table 7 and are discussed briefly below by location. As requested, the ESL comparison values discussed below are

generally those for residential land use and consider the assumption that groundwater is not considered a current or potential drinking water source; the reader is referred to the Tables and references for additional information. Sample locations are shown on Figures 2 and 3.

Arsenic in Soil

Arsenic was detected above the ESL of 0.39 milligrams per kilogram (mg/kg) in all of the soil samples collected from the Site. However, with the exceptions of two samples (PA-3 [former waste water pond] and SP-10 [stockpiled soil]), the concentrations all fall within the range of naturally occurring background concentrations for California soils, the upper bound of which is 11 mg/kg, as reported in the study entitled Background Concentrations of Trace and Major Elements in California Soils (Bradford, 1996). This study is consistent with the findings of the report entitled Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region (Duverge, 2011).

Former Railroad Spur Area

All soil constituents tested for in soil collected in the vicinity of the former railroad spur were either below the analytical reporting limits, their respective ESLs, or within a range of expected naturally occurring concentrations.

Waste Water Ponds

All analyzed constituents in soil and groundwater were either below the analytical reporting limits, within expected naturally occurring concentration ranges, or below the referenced ESLs in the vicinity of the waste water ponds with the exception of the following:

- TPH-mo was detected above the ESL in the soil sample collected from boring PA-3, which was completed within the northern waste water pond area.
- Arsenic and lead were also detected above their ESLs in the soil sample from PA-3, in the northern waste water pond area.
- The metals arsenic, cadmium, cobalt, copper, nickel, vanadium, and zinc were detected above the ESL in groundwater samples collected from the waste water pond areas.

Sump

All analyzed constituents in soil and groundwater were either below the analytical reporting limits, within expected naturally occurring concentration ranges, or below the referenced ESLs in the vicinity of the sump with the exception of the metals nickel and vanadium which were detected above the ESL in the groundwater sample collected in the vicinity of the sump.

Septic Tanks and Leach Field Areas

All constituents were either below the analytical reporting limits, within expected naturally occurring concentration ranges, or below the referenced ESLs in soil samples collected from the septic tank and leach field areas. However, several petroleum constituents were detected above their ESLs in groundwater samples collected from the former septic tank and leach field.

The metals barium, cobalt, copper, mercury, and nickel were also detected above their ESLs in groundwater samples collected from the septic tank and leach field.

Former Auto Maintenance Area

All analyzed constituents in soil, soil vapor, and groundwater were either below the analytical reporting limits or below the referenced ESLs in the vicinity of the former auto maintenance area with the exception of the following:

- TPH-g and TPH-d were detected above the ESLs, in the soil sample collected from boring AM-1, which was completed near the southeast corner of the former auto maintenance area.
- Several petroleum constituents were detected above their ESLs in groundwater samples beneath the former auto maintenance area with the most elevated concentrations in the vicinity of AM-1 in the southeastern portion of the former auto maintenance area.

Former UST Area

Petroleum constituents were detected in the majority of the soil, soil gas, and groundwater samples from this area, as summarized below:

- TPH-g, TPH-d, TPH-mo, benzene, ethylbenzene, and xylenes were detected above their ESLs in soil samples collected from the former UST area.
- Elevated petroleum constituents were detected above the ESL in each of the groundwater samples collected from the former UST area.
- The compounds benzene, ethylbenzene, xylenes, tetrachloroethene (PCE), and TPH-g were detected above their ESLs in the soil gas sample collected from boring G-3.

Former Facility Building Footprint

All analyzed constituents in soil, soil vapor, and groundwater were either below the analytical reporting limits or below the referenced ESLs in the vicinity of the former facility building footprint with the exception of the following:

- Lead was detected in soil above the ESL in the soil sample collected from 3.5 feet bgs from boring BLDG-1, which was completed within in the western portion of the former building footprint.
- Benzene was detected above the ESL in the groundwater sample from BLDG-3.

Soil Stockpile

All analyzed constituents in soil were either below the analytical reporting limits, within established background levels based on the Bradford 1996 study [0.6 to 11 mg/kg (arsenic), 14.3 to 107.9 mg/kg (lead), and 9 to 509 mg/kg (nickel)], or below their respective ESLs in the soil stockpile samples with the exception of the following:

- TPH-d was detected above the ESL in one sample from the stockpiled soil (SP-12 at 11.5 feet).

- TPH-mo was detected above the ESL for shallow soil (<3 meters) in six samples from the stockpiled soil.
- The OC pesticide dieldrin was detected above the ESL in one sample from the stockpiled soil (SP-10 at 3.5 feet).
- The SVOC phenol was detected in a number of samples from the stockpiled soil; however, none of these detections exceeded the non-drinking water based soil ESL.
- The lead concentration measured in the sample from SP-6 at 8.5 feet and the nickel concentration measured in the sample from SP-10 at 3.5 feet were elevated when compared to other samples collected from the soil stockpile.

5.0 SUMMARY

On June 17 through June 19, and June 23, 2014, a total of 62 soil samples, 18 groundwater samples, and six soil vapor samples were collected from the Site (Figures 2 and 3). The samples were collected to assess current subsurface environmental conditions at the Site. Findings were compared with ESLs and/or referenced background levels, if available. These results should be considered when planning for development and use of the property.

6.0 REPORT LIMITATIONS AND RELIANCE

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, subject to scope of work for which AEI was retained and limitations inherent in this type of work, but it cannot be assumed that they are representative of areas not sampled. This report should not be regarded as a guarantee that no further contamination beyond that which could have been detected within the scope of this investigation is present beneath the subject property. Undocumented, unauthorized releases of hazardous material, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation.

Conclusions and/or recommendations, if any, are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work. No other warranty, either expressed or implied, has been made.

This investigation was prepared for the sole use and benefit of DeNova Homes, Inc. All reports, both verbal and written, whether in draft or final, are for the benefit of DeNova Homes, Inc. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms & Conditions executed by DeNova Homes, Inc. on May 27, 2014. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

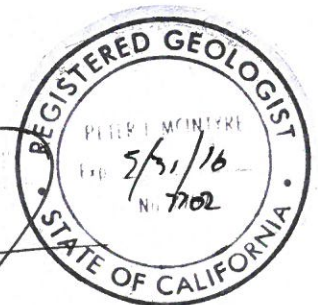
If there are any questions regarding our investigation, please do not hesitate to contact AEI at (925) 746-6000.

Sincerely,
AEI Consultants

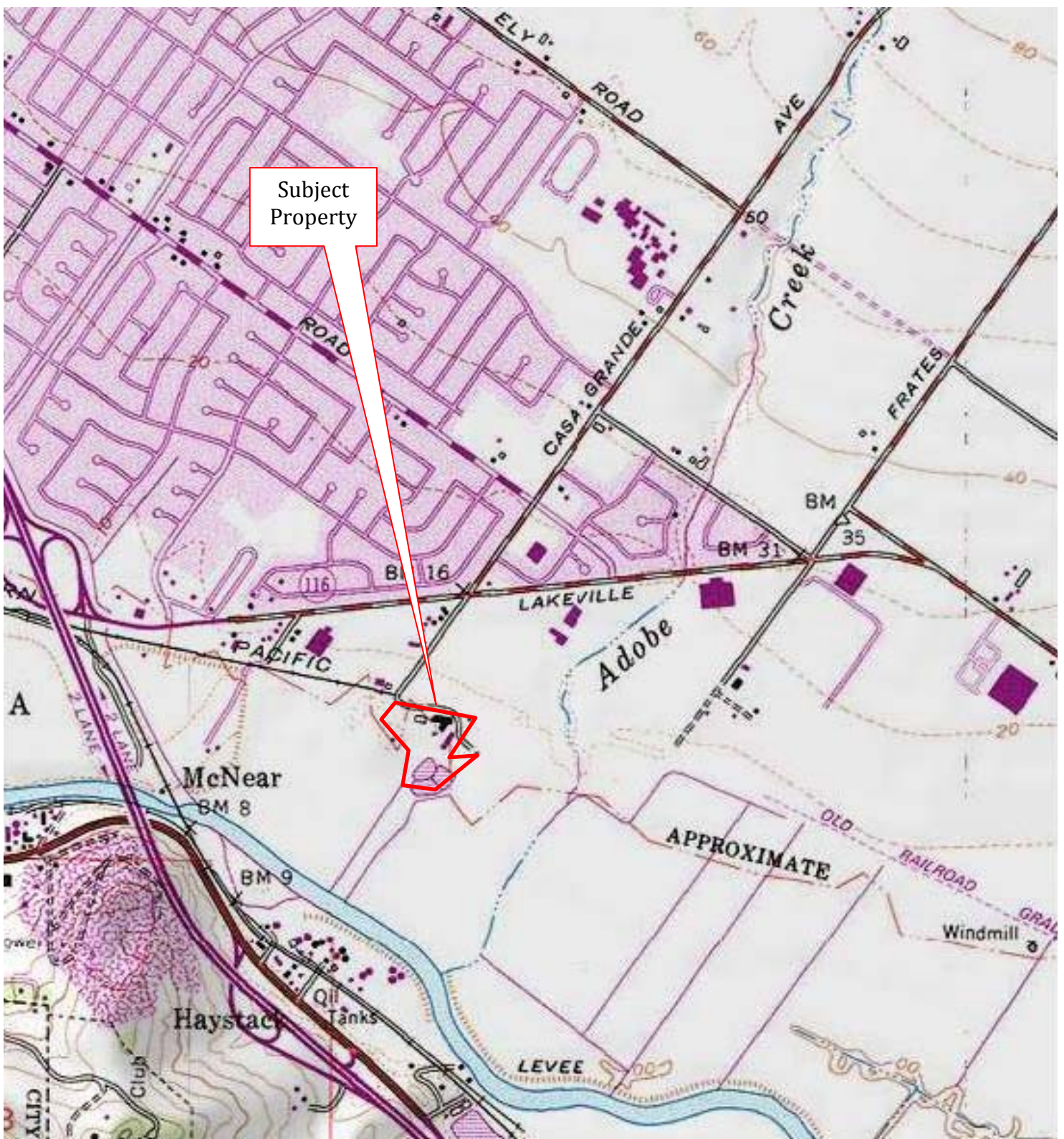

Diego Gonzalez
Project Geologist


David Provance, PG
Senior Project Manager


Peter McIntyre, PG
Executive Vice President



FIGURES



SITE LOCATION MAP

2592 Lakeville Highway, Petaluma, California, 94954



Approximate Property Boundary ▬

Source: USGS Topographic Map, *Petaluma River California* (1980)

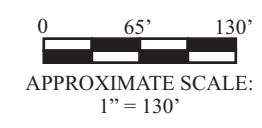
FIGURE 1

Project Number: 327703

AEI
Consultants



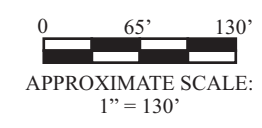
LEGEND			
	Approximate Property Boundary		AEI Soil Boring Locations
	Former Railroad Spur		AEI Soil Gas Well Locations
	Former Structures		Approximate Extent of 2002 Remedial Excavation Source: Site Plan-Darling International, Inc. (Figure 2) MFG, Inc. Project No. 030070, 11/08/2006
	Former Sump		Former USTs
	Former Septic System Leach Field		Former Septic Tanks Area
	Former Wastewater Ponds		



AEI CONSULTANTS 2500 CAMINO DIABLO, WALNUT CREEK, CALIFORNIA	
BORING LOCATIONS	
2592 Lakeville Highway Petaluma, California	FIGURE 2 Project No. 327703



LEGEND			
	Approximate Property Boundary		Former USTs
	Former Railroad Spur		Former Septic System Leach Field
	Former Structures		Former Septic Tanks Area
	Approximate Boundaries of Stockpiles		Former Sump
	Former Sump		Former Wastewater Ponds
	AEI Stockpile Soil Sampling Locations		Approximate Extent of 2002 Remedial Excavation
			Source: Site Plan-Darling International, Inc. (Figure 2) MFG, Inc. Project No. 030070, 11/08/2006



AEI CONSULTANTS 2500 CAMINO DIABLO, WALNUT CREEK, CALIFORNIA	
STOCKPILE LOCATIONS	
2592 Lakeville Highway Petaluma, California	FIGURE 3 Project No. 327703

TABLES

**Table 1. Soil Sample Data Summary (Organic Constituents)
2592 Lakeville Highway, Petaluma, California**

TPH Multi-range by EPA Method 8015M & MBTEX by EPA Method 8260														OC	PCBs	SVOCs	Cl	PAHs/PNAs
Location ID	Date	Depth (feet bgs)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	Remaining VOCs* (mg/kg)	Pesticides (mg/kg)	(mg/kg)	(mg/kg)	Herbicides (mg/kg)	(mg/kg)	
Former Railroad Spur																		
RS-1	6/23/2014	2.5	<1.0	5.0	23	NA	NA	NA	NA	NA	NA	NA	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
RS-2	6/23/2014	2.5	<1.0	3.6	9.9	NA	NA	NA	NA	NA	NA	NA	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
RS-3	6/23/2014	2.5	<1.0	25	46	NA	NA	NA	NA	NA	NA	NA	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
Sump																		
SMP-1	6/19/2014	7.5	<1.0	1.1	6.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Waste Disposal Ponds																		
PA-1	6/17/2014	2.5	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
PA-2	6/17/2014	2.5	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
PA-3	6/19/2014	2.5	<1.0	89	660	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
PA-4	6/19/2014	2.5	<1.0	<1.0	6.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
PB-1	6/19/2014	2.5	<1.0	7.5	39	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
PB-2	6/19/2014	2.5	<1.0	1.6	7.4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Septic Tank and Leach Field																		
ST-1	6/19/2014	7.5	17	9.5	<5.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
LF-1	6/19/2014	3.5	3.8	3.9	15	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
LF-2	6/19/2014	3.5	22	11	<5.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Former Auto Maintenance Area																		
AM-1	6/17/2014	7.5	610	140	7.6	<0.33	<0.33	2.7	1.3	<0.33	1.6	<MRL	NA	NA	NA	NA	NA	NA
AM-2	6/17/2014	5.5	5.6	6.3	5.4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
AM-3	6/17/2014	2.5	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Former Underground Storage Tank (UST) Area																		
UST-1	6/17/2014	3.5	1,100	210	17	<2.0	2.1	5.8	27	<2.0	NA	<MRL	NA	NA	NA	NA	NA	NA
UST-1	6/17/2014	11.5	<1.0	<1.0	5.8	<0.005	<0.005	0.0081	0.026	<0.005	NA	<MRL	NA	NA	NA	NA	NA	NA
UST-2	6/17/2014	3.5	78	40	130	<0.033	<0.033	0.32	0.45	<0.033	NA	<MRL	NA	NA	NA	NA	NA	NA
UST-2	6/17/2014	11.5	<1.0	<1.0	9.0	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<MRL	NA	NA	NA	NA	NA	NA
UST-3	6/17/2014	3.5	89	11	7.2	0.26	<0.05	0.63	0.7	<0.05	NA	NA	NA	NA	NA	NA	NA	NA
UST-3	6/17/2014	7.5	35	6.8	<5.0	0.085	<0.033	0.15	0.079	<0.033	NA	NA	NA	NA	NA	NA	NA	NA
UST-4	6/17/2014	3.5	430	47	9.2	1.0	<0.33	1.7	7.7	<0.33	NA	NA	NA	NA	NA	NA	NA	NA
UST-4	6/17/2014	7.5	140	44	8.4	0.46	<0.1	0.92	3.8	<0.1	NA	NA	NA	NA	NA	NA	NA	NA
UST-5	6/17/2014	3.5	340	150	16	<0.1	<0.1	1.9	2.3	<0.1	NA	NA	NA	NA	NA	NA	NA	NA
UST-5	6/17/2014	7.5	280	17	6.5	0.55	<0.2	0.38	0.99	<0.2	NA	NA	NA	NA	NA	NA	NA	NA
UST-6	6/17/2014	1.5	130	14	11	<0.2	<0.02	0.04	0.14	<0.02	NA	NA	NA	NA	NA	NA	NA	NA
UST-6	6/17/2014	9.5	21	2.4	<5.0	<0.005	<0.005	<0.005	0.007	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
Former Facility Building Footprint																		
BLDG-1	6/19/2014	3.5	<1.0	2.0	8.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BLDG-2	6/19/2014	3.5	<1.0	<1.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BLDG-3	6/19/2014	3.5	<1.0	1.7	6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comparison Values:																		
ESL Table A-1 (DW)			100	100	100	0.044	2.9	3.3	2.3	0.023	1.2	varies	varies	0.22	varies	varies	varies	varies
ESL Table B-1 (Non-DW)			100	100	100	0.74	9.3	4.7	11	8.4	3.1	varies	varies	0.22	varies	varies	varies	varies
ESL Table C-1 (DW)			500	110	500	0.044	2.9	3.3	2.3	0.023	1.2	varies	varies	0.22	varies	varies	varies	varies
ESL Table D-1 (Non-DW)			500	110	500	0.74	9.3	4.7	11	8.4	3.1	varies	varies	0.22	varies	varies	varies	varies

Notes:

mg/kg milligrams per kilogram
 <MRL = less than the method reporting limit or no ESL
 NA = sample for not analyzed for indicated constituent(s)
 bgs = below ground surface
 DW Drinking Water Comparison Values
 Non-DW Non-Drinking Water Comparison Values
Bold = Result exceeds Drinking Water Comparison Values
Bold = Result exceeds Drinking and Non-Drinking Water Comparison Values

TPH-g = Total Petroleum Hydrocarbons as Gasoline
 TPH-d = Total Petroleum Hydrocarbons as Diesel
 TPH-mo = Total Petroleum Hydrocarbons as Motor Oil
 SVOCs = Semi-Volatile Organic Compounds
 PAHs/PNAs = Polyaromatic Hydrocarbons and Polynuclear Aromatic Hydrocarbons
 * = Detections for n-Butyl benzene, Isopropyl benzene, n-propyl benzene, 1,2,4-TMB, 1,3,5-TMB are not listed because no ESLs are established for these compounds

MTBE = Methyl tert-Butyl Ether
 OC Pesticides = Organo-chlorine Pesticides
 PCBs = Polychlorinated Biphenyls
 Cl Herbicides = Chlorinated Herbicides

Comparison Values:

ESL Table A-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
 ESL Table B-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)
 ESL Table C-1: Deep Soil Screening Levels (>3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
 ESL Table D-1: Deep Soil Screening Levels (>3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)

From Derivation and Application of Environmental Screening Levels, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

**Table 2. Soil Sample Data Summary (CAM 17 Metals)
2592 Lakeville Highway, Petaluma, California**

Location ID	Date	Depth (feet bgs)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Silver (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Remaining Metals* (mg/kg)
Former Railroad Spur																		
RS-1	6/23/2014	2.5	<0.5	3.8	110	<0.5	0.39	33	8.9	17	26	0.084	<0.5	37	<0.5	37	200	<MRL
RS-2	6/23/2014	2.5	<0.5	6.8	110	<0.5	<0.5	30	8.5	15	19	0.097	<0.5	25	<0.5	40	110	<MRL
RS-3	6/23/2014	2.5	0.52	3.9	92	0.51	0.46	69	14	23	18	0.065	<0.5	45	<0.5	60	210	<MRL
Sump																		
SMP-1	6/19/2014	7.5	0.83	10	220	1.1	<0.25	77	17	34	11	0.3	<0.5	<0.5	<0.5	74	82	<MRL
Waste Disposal Ponds																		
PA-1	6/18/2014	2.5	<0.5	7.9	110	0.71	<0.25	74	16	26	9.0	0.11	0.6	86	<0.5	70	59	<MRL
PA-2	6/18/2014	2.5	<0.5	2.7	230	0.7	<0.25	61	6.9	22	5.5	0.23	<0.5	47	<0.5	55	37	<MRL
PA-3	6/18/2014	2.5	22	15	330	<0.5	6.8	65	15	280	930	1.8	2.9	69	1.1	43	2,000	<MRL
PA-4	6/18/2014	2.5	0.56	4.3	130	1.0	0.47	75	21	40	14	0.38	2.4	79	<0.5	77	160	<MRL
PB-1	6/18/2014	2.5	0.52	6.6	250	1.0	<0.25	68	21	47	30	0.23	<0.5	65	<0.5	68	130	<MRL
PB-2	6/18/2014	2.5	<0.5	5.6	240	0.72	<0.25	39	13	18	7.2	0.26	<0.5	46	<0.5	46	46	<MRL
Septic Tank and Leach Field																		
ST-1	6/19/2014	19.5	<0.5	4.7	170	1.1	<0.25	65	17	30	9.3	0.41	<0.5	53	<0.5	65	71	<MRL
LF-1	6/19/2014	15.5	<0.5	8.7	260	0.88	<0.25	46	19	17	12	0.061	<0.5	40	<0.5	67	35	<MRL
LF-2	6/19/2014	15.5	<0.5	4.3	150	0.69	<0.25	59	9.8	25	8.8	0.12	<0.5	49	<0.5	56	49	<MRL
Former Facility Building Footprint																		
BLDG-1	6/19/2014	3.5	1.3	4.9	190	0.6	0.3	52	14	42	220	0.29	<0.5	48	<0.5	69	140	<MRL
BLDG-2	6/19/2014	3.5	0.98	4.7	150	0.96	<0.25	58	13	26	7.6	0.2	<0.5	64	<0.5	56	57	<MRL
BLDG-3	6/19/2014	3.5	0.52	6.4	150	0.94	<0.25	59	15	30	8.8	0.39	<0.5	63	<0.5	65	61	<MRL
Comparison Values:																		
TTL(mg/kg)			500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	500	2,400	5,000	varies
STL(mg/L)			15.0	5.0	100	0.75	1.0	5.0	80	25	5.0	0.2	350	20	5.0	24	250	varies
TCL(mg/L)			-	5.0	100	-	1.0	5.0	-	-	5.0	0.2	-	-	5.0	-	-	varies
ESL Table A-1 (DW)			20	0.39	750	4.0	12	1,000	23	230	80	6.7	40	150	20	200	600	varies
ESL Table B-1 (Non-DW)			20	0.39	750	4.0	12	1,000	23	230	80	6.7	40	150	20	200	600	varies
ESL Table C-1 (DW)			31	0.39	2,500	160	78	2,500	23	2,500	80	6.7	390	1,500	390	390	2,500	varies
ESL Table D-1 (Non-DW)			31	0.39	2,500	160	78	2,500	23	2,500	80	6.7	390	1,500	390	390	2,500	varies

Notes:

- mg/kg = milligrams per kilogram
 - <MRL = less than the method reporting limit
 - ESL = Environmental Screening Level
 - bgs = below ground surface
 - DW = Drinking Water Comparison Values
 - Non-DW = Non-Drinking Water Comparison Values
 - Bold** = Result exceeds Drinking Water Comparison Values
 - Bold** = Result exceeds Drinking and Non-Drinking Water Comparison Values
- * = Remaining metals (not detected) include selenium and thallium
- = No established comparison value

Comparison Values:

- ESL Table A-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
- ESL Table B-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)
- ESL Table C-1: Deep Soil Screening Levels (>3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
- ESL Table D-1: Deep Soil Screening Levels (> 3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)

From Derivation and Application of Environmental Screening Levels, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

**Table 3. Stockpiled Soil Data Summary (Organic Constituents)
2592 Lakeville Highway, Petaluma, California**

Location ID	Date	Depth (feet bgs)	TPH-g mg/kg	TPH-d mg/kg	TPH-mo mg/kg	OC Pesticides										PCBs mg/kg	OP Pesticides mg/kg	CI Herbicides mg/kg	SVOCs		Asbestos mg/kg	VOCs mg/kg
						Chlordane (Technical) mg/kg	a-Chlordane mg/kg	g-Chlordane mg/kg	p,p-DDD mg/kg	p,p-DDE mg/kg	p,p-DDT mg/kg	Dieldrin mg/kg	Remaining OC Pesticides mg/kg	Phenol mg/kg	Other SVOCs mg/kg							
SP-1	6/18/2014	3.5	<1.0	1.6	8.5	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.1	<2.0	<MRL	1.6	<MRL	ND	<MRL	
SP-1	6/18/2014	5.5	<1.0	<1.0	<5.0	<0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.1	<MRL	<0.25	<MRL	ND	<MRL	
SP-1	6/18/2014	9.5	<1.0	6.3	34	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.1	<5.0	<MRL	<1.2	<MRL	ND	<MRL		
SP-5	6/18/2014	2.5	<1.0	4.0	34	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.1	<2.0	<MRL	<1.2	<MRL	ND	<MRL		
SP-5	6/18/2014	5.5	<1.0	3.4	22	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.1	<1.0	<MRL	<1.2	<MRL	ND	<MRL		
SP-5	6/18/2014	8.5	<1.0	10	94	<0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.25	<5.0	<MRL	<2.0	<MRL	ND	<MRL		
SP-6	6/18/2014	2.5	<1.0	54	300	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<1.0	<5.0	<MRL	<4.0	<MRL	ND	<MRL		
SP-6	6/18/2014	5.5	<1.0	2.4	7.9	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.1	<1.0	<MRL	0.79	<MRL	ND	<MRL		
SP-6	6/18/2014	8.5	<1.0	25	130	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<1.0	<5.0	<MRL	<4.0	<MRL	ND	<MRL		
SP-7	6/19/2014	2.5	<1.0	7.2	73	<0.12	0.0092	0.0061	0.035	0.14	0.053	<0.001	<MRL	<0.25	<2.0	<MRL	<1.2	<MRL	ND	<MRL		
SP-8	6/19/2014	2.5	<1.0	5.6	94	<0.12	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<MRL	<0.25	<5.0	<MRL	3.1	<MRL	ND	<MRL		
SP-8	6/19/2014	5.5	<1.0	1.2	9.1	<0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<MRL	<0.05	<1.0	<MRL	1.2	<MRL	ND	<MRL		
SP-8	6/19/2014	8.5	<1.0	7.2	100	<0.12	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<MRL	<0.25	<10	<MRL	<2.0	<MRL	ND	<MRL		
SP-9	6/19/2014	2.5	<1.0	1.3	15	0.056	0.0073	0.0069	<0.001	<0.001	<0.001	<0.001	<MRL	<0.05	<2.0	<MRL	<0.25	<MRL	ND	<MRL		
SP-9	6/19/2014	5.5	<1.0	2.5	33	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<MRL	<0.1	<2.0	<MRL	<1.2	<MRL	ND	<MRL		
SP-9	6/19/2014	8.5	<1.0	77	440	<0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<MRL	<0.5	<10	<MRL	<4.0	<MRL	ND	<MRL		
SP-9	6/19/2014	11.5	2.6	1.3	6.1	<0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<MRL	<0.05	<0.1	<MRL	<0.25	<MRL	ND	<MRL		
SP-10	6/19/2014	3.5	<1.0	7.7	28	0.14	0.021	0.016	0.0027	0.0079	0.0055	0.0042	<MRL	<0.1	<1.0	<MRL	0.94	<MRL	ND	<MRL		
SP-10	6/19/2014	7.5	3.3	80	96	<0.05	<0.002	0.0021	0.039	0.0078	0.019	<0.002	<MRL	<0.1	<1.0	<MRL	<2.0	<MRL	ND	<MRL		
SP-10	6/19/2014	11.5	<1.0	8.7	19	<0.025	<0.001	<0.001	0.0022	0.0018	<0.001	<0.001	<MRL	<0.05	<2.0	<MRL	0.34	<MRL	ND	<MRL		
SP-11	6/19/2014	2.5	<1.0	2.2	34	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<MRL	<0.1	<2.0	<MRL	<0.5	<MRL	ND	<MRL		
SP-11	6/19/2014	5.5	<1.0	19	140	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<MRL	<0.1	<5.0	<MRL	<0.25	<MRL	ND	<MRL		
SP-11	6/19/2014	8.5	<1.0	2.1	25	<0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<MRL	<0.1	<2.0	<MRL	<0.25	<MRL	ND	<MRL		
SP-11	6/19/2014	11.5	<1.0	16	29	<0.025	<0.001	<0.001	0.0014	0.001	<0.001	<0.001	<MRL	<0.05	<1.0	<MRL	<2.0	<MRL	ND	<MRL		
SP-12	6/19/2014	3.5	<1.0	15	100	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<MRL	<1.0	<2.0	<MRL	<0.25	<MRL	ND	<MRL		
SP-12	6/19/2014	7.5	<1.0	16	290	<0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<MRL	<0.5	<5.0	<MRL	<0.25	<MRL	ND	<MRL		
SP-12	6/19/2014	11.5	14	280	120	<0.025	<0.001	<0.001	0.0014	0.001	<0.001	<0.001	<MRL	<0.05	<0.1	<MRL	<2.0	<MRL	ND	<MRL		
Comparison Values:																						
ESL Table A-1 (DW)			100	100	100	0.44	-	-	2.4	1.7	1.7	0.0023	varies	0.22	varies	varies	0.076	varies	-	varies		
ESL Table B-1 (Non-DW)			100	100	100	0.44	-	-	2.4	1.7	1.7	0.0023	varies	0.22	varies	varies	3.9	varies	-	varies		
ESL Table C-1 (DW)			500	110	500	0.44	-	-	2.4	1.7	1.7	0.0023	varies	0.22	varies	varies	0.076	varies	-	varies		
ESL Table D-1 (Non-DW)			500	110	500	0.44	-	-	2.4	1.7	1.7	0.0023	varies	0.22	varies	varies	3.9	varies	-	varies		

Notes:

- mg/kg = milligrams per kilogram
 - <MRL = less than the method reporting limit
 - NA = not analyzed
 - ND = None Detected (Asbestos analyzed by CARB Method 435)
 - ESL = Environmental Screening Level
 - bgs = below ground surface
 - DW = Drinking Water Comparison Values
 - Non-DW = Non-Drinking Water Comparison Values
 - bold** = Result exceeds Drinking Water comparison values
 - bold** = Result exceeds Drinking and Non-Drinking Water comparison values
- OC Pesticides = Organo-chlorine Pesticides
 - OP Pesticides = Organo-phosphate Pesticides
 - PCBs = Polychlorinated Biphenyl
 - Herbicides = Chlorinated Herbicides
 - VOCs = Semi-volatile organic compounds
 - SVOCs = Volatile organic compounds
 - No established comparison value

Comparison Values:

- ESL Table A-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
- ESL Table B-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)
- ESL Table C-1: Deep Soil Screening Levels (>3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
- ESL Table D-1: Deep Soil Screening Levels (>3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)

From Derivation and Application of Environmental Screening Levels, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

**Table 4. Stockpiled Soil Data Summary (CAM 17 Metals)
2592 Lakeville Highway, Petaluma, California**

Location ID	Date	Depth (feet bgs)	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Total Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Lead mg/kg	Mercury mg/kg	Molybdenum mg/kg	Nickel mg/kg	Silver mg/kg	Vanadium mg/kg	Zinc mg/kg	Remaining Metals* (mg/kg)
SP-1	6/18/2014	3.5	<0.50	1.7	33	0.57	<0.25	17	6.0	11	3.1	0.14	<0.50	17	<0.50	27	32	<MRL
SP-1	6/18/2014	5.5	<0.50	2.6	83	<0.50	<0.25	40	13	16	3.8	0.12	<0.50	32	<0.50	56	32	<MRL
SP-1	6/18/2014	9.5	<0.50	4.2	120	<0.50	<0.25	46	15	33	23	0.075	<0.50	38	<0.50	49	71	<MRL
SP-5	6/18/2014	2.5	0.77	4.9	140	0.85	<0.25	80	18	28	6.7	0.13	1.2	76	<0.50	85	55	<MRL
SP-5	6/18/2014	5.5	<0.50	8.8	600	0.88	<0.25	50	36	22	8.0	0.18	0.86	50	<0.50	85	44	<MRL
SP-5	6/18/2014	8.5	<0.50	5.7	160	0.55	<0.25	60	16	30	36	0.086	0.54	46	<0.50	73	80	<MRL
SP-6	6/18/2014	2.5	<0.50	4.3	130	0.57	<0.25	48	16	22	9.0	0.096	<0.50	50	<0.50	62	52	<MRL
SP-6	6/18/2014	5.5	<0.50	3.4	130	0.69	<0.25	44	16	19	6.7	0.2	<0.50	41	<0.50	64	38	<MRL
SP-6	6/18/2014	8.5	1.0	7.4	180	0.52	0.31	46	14	36	8.2	0.13	0.68	41	<0.50	55	160	<MRL
SP-7	6/19/2014	2.5	<0.50	2.8	110	0.65	<0.25	110	19	36	9.7	0.074	<0.50	52	<0.50	100	52	<MRL
SP-8	6/19/2014	2.5	<0.50	6.3	160	<0.50	<0.25	31	14	32	12	0.17	0.51	49	<0.50	37	77	<MRL
SP-8	6/19/2014	5.5	<0.50	3.1	96	0.56	<0.25	34	12	24	3.5	0.056	<0.50	38	<0.50	56	38	<MRL
SP-8	6/19/2014	8.5	<0.50	8.1	170	0.59	0.41	48	12	25	13	0.25	0.79	56	<0.50	45	60	<MRL
SP-9	6/19/2014	2.5	<0.50	3.8	100	0.65	<0.25	78	17	26	6.4	0.058	<0.50	83	<0.50	84	51	<MRL
SP-9	6/19/2014	5.5	0.81	7.3	160	0.52	<0.25	140	18	30	12	0.56	<0.50	120	<0.50	63	61	<MRL
SP-9	6/19/2014	8.5	<0.50	0.82	43	<0.50	<0.25	62	14	44	0.69	<0.05	0.63	36	<0.50	42	24	<MRL
SP-9	6/19/2014	11.5	<0.50	5.1	160	0.6	<0.25	36	9.5	13	13	<0.05	<0.50	25	<0.50	40	40	<MRL
SP-10	6/19/2014	3.5	0.59	1.1	140	0.55	<0.25	240	23	35	10	0.11	0.53	340	<0.50	78	89	<MRL
SP-10	6/19/2014	7.5	<0.50	3.8	110	0.66	<0.25	53	22	21	12	0.11	<0.50	56	<0.50	52	64	<MRL
SP-10	6/19/2014	11.5	<0.50	4.5	120	<0.50	<0.25	54	13	23	13	0.15	<0.50	48	<0.50	60	58	<MRL
SP-11	6/19/2014	2.5	<0.50	4.5	160	0.63	<0.25	48	15	24	6.8	0.31	<0.50	59	<0.50	70	45	<MRL
SP-11	6/19/2014	5.5	0.76	4.3	200	0.65	<0.25	92	17	31	43	0.38	0.56	73	<0.50	83	110	<MRL
SP-11	6/19/2014	8.5	<0.50	4.9	300	0.82	<0.25	59	16	23	10	0.86	1.3	59	<0.50	52	51	<MRL
SP-11	6/19/2014	11.5	<0.50	4.1	160	0.56	<0.25	71	21	26	16	0.17	<0.50	65	<0.50	81	150	<MRL
SP-12	6/19/2014	3.5	<0.50	3.8	140	0.61	<0.25	35	11	19	14	0.28	0.61	32	<0.50	53	65	<MRL
SP-12	6/19/2014	7.5'	<0.50	5.4	170	0.57	<0.25	77	13	25	12	0.11	0.81	59	<0.50	69	54	<MRL
SP-12	6/19/2014	11.5'	<0.50	4.0	130	0.63	<0.25	55	11	19	6.6	0.23	<0.50	47	<0.50	48	39	<MRL
Comparison Values:																		
			500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	500	2,400	5,000	varies
			15.0	5.0	100	0.75	1.0	5.0	80	25	5.0	0.2	350	20	5.0	24	250	varies
			-	5.0	100	-	1.0	5.0	-	-	5.0	0.2	-	-	5.0	-	-	varies
			20	0.39	750	4.0	12	1,000	23	230	80	6.7	40	150	20	200	600	varies
			20	0.39	750	4.0	12	1,000	23	230	80	6.7	40	150	20	200	600	varies

Notes:

- mg/kg = milligrams per kilogram
- <MRL = less than the method reporting limit
- bgs = below ground surface
- TTLC = Total Threshold Limit Concentration
- STLC = Soluble Threshold Limit Concentration
- TCLP = Toxic Leaching Characteristic Procedure
- ESL = Environmental Screening Level
- DW = Drinking Water Comparison Values
- Non-DW = Non-Drinking Water Comparison Values
- * = Remaining metals (not detected) include selenium and thallium
- Bold** = Result exceeds Drinking Water comparison values
- Bold=** Result exceeds Drinking and Non-Drinking comparison values
- = No established comparison value

Comparison Values:

- ESL Table A-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is a current or potential drinking water resource)
- ESL Table B-1: Shallow Soil Screening Levels (<3 meters bgs) Residential Land Use (groundwater is not a current or potential drinking water resource)

From Derivation and Application of Environmental Screening Levels, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

**Table 5. Groundwater Data Summary (Organic Constituents)
2592 Lakeville Highway, Petaluma, California**

Location ID	Date	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Remaining VOCs* (µg/L)
Sump											
SMP-1	6/19/2014	<50	60	<250	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<MRL
Waste Disposal Ponds											
PA-3	6/17/2014	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<MRL
PB-1	6/17/2014	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<MRL
Septic Tank and Leach Field											
ST-1	6/19/2014	29,000	3,300	<250	5,900	270	710	1,900	<100	190	<MRL
LF-1	6/19/2014	6,800	3,000	280	22	2.6	46	7.1	<2.5	15	<MRL
LF-2	6/19/2014	11,000	5,500	430	130	200	350	1,500	<10	100	<MRL
Former Auto Maintenance Area											
AM-1	6/17/2014	5,600	1,800	430	260	16	270	53	<0.5	100	<MRL
AM-2	6/17/2014	490	160	<250	0.75	<0.5	6.9	<0.5	<0.5	3.7	<MRL
AM-3	6/17/2014	<50	93	450	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<MRL
Former Underground Storage Tank (UST) Area											
UST-1	6/17/2014	35,000	12,000	250	2,100	440	1,200	3,900	<50	NA	NA
UST-2	6/17/2014	1,700	690	<250	18	<1.2	34	70	<1.2	NA	NA
UST-3	6/17/2014	1,300	310	<250	74	3.9	53	97	<2.5	NA	NA
UST-4	6/17/2014	7,400	1,800	<250	320	55	270	1,000	<10	NA	NA
UST-5	6/17/2014	2,900	700	<250	120	4.2	75	160	<2.5	NA	NA
UST-6	6/17/2014	8,600	1,000	<250	2,100	78	290	870	<50	NA	NA
Former Facility Building Footprint											
BLDG-1	6/19/2014	<50	150	620	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<MRL
BLDG-2	6/19/2014	220	73	<250	27	2.5	9.2	23	<0.5	2.4	<MRL
BLDG-3	6/19/2014	320	98	<250	39	3.0	9.7	17	<0.5	2.9	<MRL
Comparison Values:											
ESL Table F-1a (DW)		100	100	100	1.0	40	30	20	5.0	6.1	varies
ESL Table F-1b (Non-DW)		500	640	640	27	130	43	100	1,800	24	varies

Notes:

- µg/L = micrograms per liter
- <MRL = less than the method reporting limit or no ESL
- bgs = below ground surface
- NA = sample not analyzed for indicated constituent
- * = Detections for t-Butyl alcohol, n-Butyl benzene, sec-Butyl benzene, diisopropyl ether, isopropyl benzene, 4-isopropyl toluene, n-Propyl benzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and 2-Butanone were not reported because there is no established ESL for these compounds
- DW= Drinking Water Comparison Values
- Non-DW= Non-Drinking Water Comparison Values
- Bold** = Result exceeds Drinking Water comparison values
- Underlined** = Result exceeds Drinking and Non-Drinking Water comparison values

Comparison Values:

- ESL Table F-1a: Groundwater Screening Levels (groundwater is a current or potential drinking water resource)
- ESL Table F-1b: Groundwater Screening Levels (groundwater is not a current or potential drinking water resource)

From Derivation and Application of Environmental Screening Levels, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

**Table 6. Groundwater Data Summary (CAM 17 Metals)
2592 Lakeville Highway, Petaluma, California**

Location ID	Date	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Cadmium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	Remaining Metals* (µg/L)
Sump													
SMP-1	6/19/2014	<5.0	8.7	240	<2.5	<5.0	<5.0	<0.25	<5.0	420	39	<50	<MRL
Waste Disposal Ponds													
PA-3	6/17/2014	<5.0	39	89	<2.5	53	15	<0.25	42	140	13	110	<MRL
PB-1	6/17/2014	<5.0	24	600	3.2	56	10	<0.25	10	110	23	110	<MRL
Septic Tank and Leach Field													
ST-1	6/19/2014	<5.0	16	1,100	<2.5	36	<5.0	<0.25	22	76	5.3	<50	<MRL
LF-1	6/19/2014	<5.0	12	1,300	<2.5	37	5.4	0.6	87	270	11	<50	<MRL
LF-2	6/19/2014	<5.0	<5.0	310	<2.5	<5.0	<5.0	<0.25	47	45	5.4	<50	<MRL
Comparison Values:													
ESL Table F-1a (DW)		6.0	10	1,000	0.25	3.0	3.1	0.025	78	8.2	19	81	varies
ESL Table F-1b (Non-DW)		30	36	1,000	0.25	3.0	3.1	0.025	240	8.2	19	81	varies

Notes:

- µg/L = micrograms per liter
- <MRL = less than the method reporting limit
- bgs = below ground surface
- * = Remaining metals include silver, beryllium, chromium, lead, mercury, selenium, silver, and thallium. These constituents were not detected above the laboratory reporting limits
- ESL = Environmental Screening Level
- DW= Drinking Water Comparison Values
- Non-DW= Non-Drinking Water Comparison Values
- Bold** = Result exceeds Drinking Water comparison values
- Bold** = Result exceeds Drinking and Non-Drinking Water comparison values

Comparison Values:

- ESL Table F-1a: Groundwater Screening Levels (groundwater is a current or potential drinking water resource)
- ESL Table F-1b: Groundwater Screening Levels (groundwater is not a current or potential drinking water resource)

From Derivation and Application of Environmental Screening Levels, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

**Table 7. Soil Gas Sample Data Summary
2592 Lakeville Highway, Petaluma, California**

Analytical Parameter	Date	Units	Sample Locations						Comparison
			Auto Maintenance Area		UST Area		Building Footprint		Value
			G-1	G-2	G-3	G-4	G-5	G-6	ESL Table E-2
1,2,4-Trimethylbenzene	06/19/14	µg/m ³	6.8	7.4	14,000	<5.9	19	<6.6	NA
1,3,5-Trimethylbenzene	06/19/14	µg/m ³	<6.1	<5.9	6,100	<5.9	6.2	<6.6	NA
Methyl ethyl ketone	06/19/14	µg/m ³	14	26	<7600	50	130	52	2,600,000
4-Ethyltoluene	06/19/14	µg/m ³	<6.1	<5.9	18,000	<5.9	20	<6.6	NA
4-Methyl-2-pentanone	06/19/14	µg/m ³	<5.1	<5.0	<2600	6.3	<4.3	34	1,600,000
Acetone	06/19/14	µg/m ³	39	900	<6100	300	660	160	16,000,000
Benzene	06/19/14	µg/m ³	4.9	3.9	750,000	39	7.4	<4.3	42
Cumene	06/19/14	µg/m ³	<6.1	<5.9	3,800	<5.9	<5.1	<6.6	NA
Cyclohexane	06/19/14	µg/m ³	14	22	880,000	220	210	20	NA
Ethanol	06/19/14	µg/m ³	13	12	<4900	<9.0	76	100	NA
Ethyl Benzene	06/19/14	µg/m ³	<5.4	<5.2	83,000	14	17	<5.8	490
Heptane	06/19/14	µg/m ³	<5.1	<5.0	420,000	93	4.8	<5.5	NA
Hexane	06/19/14	µg/m ³	<4.4	<4.3	1,900,000	260	11	4.9	NA
Xylenes	06/19/14	µg/m ³	10	10	217,000	13	84	<5.8	52,000
Naphthalene	06/19/14	µg/m ³	<26	<25	<14000	<25	<22	<28	36
Propylbenzene	06/19/14	µg/m ³	<6.1	<5.9	5,400	<5.9	6	<6.6	NA
Tetrachloroethene	06/19/14	µg/m ³	<8.4	<8.2	6,100	<8.1	<7.0	<9.1	210
Tetrahydrofuran	06/19/14	µg/m ³	4.7	6.4	<1900	5.9	210	12	NA
Toluene	06/19/14	µg/m ³	14	40	130,000	17	46	5.8	160,000
TPH-g	06/19/14	µg/m ³	600	1600	43,000,000	6000	2100	900	300,000

Notes:

- µg/m³ = micrograms per cubic meter
- NA = No established comparison value for indicated constituent
- TPH-g = Total Petroleum Hydrocarbons as Gasoline
- ESL = Environmental Screening Level
- Bold** = Result exceeds applicable Comparison Value

Comparison Values:

ESL Table E-2: Soil Gas Screening Levels for Evaluation of Vapor Intrusion Concerns (Lowest Residential Exposure)

From Derivation and Application of ESLs, prepared by the San Francisco Bay Regional Water Quality Control Board (December 2013)

APPENDIX A

PERMITS

DEPT. OF HEALTH SVCS
 COUNTY OF SONOMA — DEPARTMENT OF HEALTH SERVICES
 ENVIRONMENTAL HEALTH & SAFETY
 625 E Street, Santa Rosa, CA 95404
 Phone (707) 565-6565 Fax (707) 565-6525 www.sonoma-county.org

JUN 02 2014

ENVIRONMENTAL HEALTH DIVISION

For Office Use Only	
Amount paid	2603
Receipt number	817B
Payment date	6.6.14
Rev. code	1343
Permit #	FA0003178
Permit #	SR0012022

APPLICATION FOR DRILLING PERMIT
 for Regional Board Lead/Environmental Assessment / LOP Lead

1410

Well type: Monitoring well Recovery extraction well Boring Injection well Destruct Environmental assessment
 Soil gas survey Direct push Air sparging/venting Remediation well Other

Well depth _____ Boring depth 3-12 feet bgs

On-site well/boring 31 ID # TBD (See Work Plan) # Off-site well/boring _____ ID # _____

Submit legal right-of-entry/off-site well address/encroachment permit
 On-site Address 2592 Lakeville Highway AP# _____

Facility Name Vacant Land (Former Royal Tallow and Soap Company)

On-site Owner Baywood, LLC Phone (707) 578-5344

Street 414 Aviation Boulevard City Santa Rosa State CA Zip 95403

Responsible Party Baywood, LLC Phone (707) 578-5344

Street 414 Aviation Boulevard City Santa Rosa State CA Zip 95403

Consultant AEI Consultants Diego Gonzalez Phone (925) 746-6000

Street 2500 Camino Diablo City Walnut Creek State CA Zip 94597

License #/Type _____

Drilling Contractor Environmental Control Associates, Inc. (ECA) Phone (831)

Street 3011 Twin Palms Drive City Aptos State CA Zip _____

C-57 License # 695970

Type of work: Initial investigation _____ # Wells Subsequent investigation _____ # Wells Destruct _____ # Wells

Groundwater investigation due to: Underground tank Surface impoundment Environmental assessment
 Surface disposal practice—specify involved industry _____
 Other _____

Perforated intervals _____ Chemical constituents _____

Disposal method for soil cuttings 55-gallon Drums Disposal method for development water _____

Drilling method Direct Push Method of drill equip. rinsate containment Sealed 5-gallon buckets

If destroying a well, abandonment method Backfill with neat cement grout

Submit plot plan of wells in relation to all sewer or septic lines.

Is well to be constructed within: 100 feet of a septic tank or leachfield? Yes No
 50 feet of any sanitary sewer line? Yes No
 25 feet of any private sanitary sewer line? Yes No



084195**
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 ENVDRILL 2603.00
 084102D
 DONATION 4.00
 TTLAMT 2607.00
 CHECKS 2607.00
 CHANGE 0.00
 817B #2 9:52

In addition, all monitoring wells must include **identification system** affixed to interior surface:
 1) Well identification 2) Well type 3) Well depth 4) Well casing diameter 5) Perforated intervals

Well identification number and well type shall be **affixed** to the **exterior surface** security structure.

For Office Use Only

Address 2592 Lakewood Hwy

Site ID# FA0003175

Permit # S120012020

I hereby agree to comply with all laws and regulations of the County of Sonoma and State of California pertaining to water well construction. I will telephone (707) 565-6565, 48 hours in advance, to notify the Environmental Health Specialist when completing or destroying a well. I will furnish the Director of Health Services and the owner a legible copy of the State Water Well Driller's Report within 15 days; and a copy of the Summary Report, including sample results, should be received by this Department within 90 days in order to obtain final approval on this well permit. I acknowledge that the application will become a permit **only** after site approval and payment of fee. I understand that this permit is not transferable and expires one year from date of issuance.

[Signature] [Signature] Date 5-29-14
 Signature of Well Driller—no proxies

Insurance Carrier State Fund Expiration Date 5-8-2015

Once all wells/borings are installed, submit a Well Driller's Log and/or Summary Report to complete permit process.

Indicate on attached plot plan the exact location of well(s) with respect to the following items: property lines, water bodies or water courses drainage pattern, roads, existing wells, sewer main and laterals and private sewage disposal systems or other sources of contamination or pollution. INCLUDE DIMENSIONS. The validity of this permit depends upon the accuracy of the information provided by the applicant.

Conditions of permit:

Borings shall be abandoned by tremie grouting

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

FOR OFFICE USE ONLY – ENVIRONMENTAL HEALTH & SAFETY

Permit approved by [Signature] Date 6,9,14

Constr. approved by _____ Observed? Yes No Well # _____ Date ____/____/____

RWQCB / LOP approval _____ Date ____/____/____





AEI Consultants

Environmental & Engineering Services

March 24, 2014

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Property Identification:

2592 Lakeville Highway
Petaluma, Sonoma County, California 94954

AEI Project No. 327703

Client Reference No. 44-1850-2014

Prepared for:

DeNova Homes
1500 Willow Pass Court
Concord, California 94520

Prepared by:

AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597
(925) 746-6000

San Francisco HQ

Atlanta

Chicago

Dallas

Denver

Irvine

Los Angeles

Miami

New York

Phoenix

Portland

San Jose

National Presence

Regional Focus

Local Solutions

DRAFT

PROJECT SUMMARY

**2592 Lakeville Highway
Petaluma, Sonoma County, California**

Report Section		No Further Action	REC	CREC	HREC	Environmental Issues	Non-ASTM Considerations	Recommended Action
2.1	Current use of subject property		X					Further Investigation of Fill Material on Site
2.2	Adjoining property information	X						
3.1	Historical Summary		X					Further Investigation of Former Waste Water Ponds
4.0	Regulatory Agency Records Review			X				Further Investigation of Soil On-Site
5.0	Regulatory Database Records Review	X						
5.2	Vapor Encroachment		X					Further Investigation to Determine if a VEC Exists
6.3	Previous Reports			X				Further Investigation of Soil On-Site
7.0	Site Inspection and Reconnaissance						X	Determine if Wetland Delineation Report is Required
7.2.1	Asbestos-Containing Materials	X						
7.2.2	Lead-Based Paint	X						
7.2.3	Radon	X						
7.2.4	Lead in Drinking Water	X						
7.2.5	Mold	X						

EXECUTIVE SUMMARY

AEI Consultants (AEI) was retained by DeNova Homes to conduct a Phase I Environmental Site Assessment (ESA), in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) for the property located at 2592 Lakeville Highway in the City of Petaluma, Sonoma County, California. Any exceptions to, or deletions from, this practice are described in Section 1.3 of this report.

PROPERTY DESCRIPTION

The subject property, which consists of vacant land, is located to the south of Lakeville Highway and southeast of Casa Grande Road, in a mixed commercial and residential area of Petaluma, California. The property totals approximately 13 acres and is not improved with any permanent structures. The subject property is currently occupied part time by a caretaker living in a trailer home parked on-site. The property is improved with a concrete driveway leading to the property from Casa Grande Road and is surrounded with a barbed wire fence. In addition, the property has a large mound of miscellaneous construction debris (which originated off-site) located on the central portion of the property. There is also a smaller pile of Class II Aggregate (concrete and asphalt) also located on the central portion of the property.

According to historical sources, the current property has been vacant land since the former Royal Tallow and Soap Company buildings were demolished in 2008. The subject property was occupied by the Royal Tallow and Soap Company from at least 1955 to 1986 when operations ceased. A small structure and a dirt road were identified on the subject property in historic topographic maps from at least 1914 to 1940, although the occupancy of the property at this time was not identified during the historical research for this report and constitutes a significant data gap. Please refer to Section 1.5 for further discussion.

The subject property was identified in the regulatory databases reviewed as a Comprehensive Environmental Response Compensation and Liability Information System No Further Remedial Action Planned (CERC-NFRAP) site, a RGA Leaking Underground Storage Tank (LUST) site (three times), a Facility and Manifest Data (HAZNET) site (three times), Historic Cortese site, a LUST site (twice), an Envirostor (with the Department of Toxic Substance Control [DTSC]) site, a California Facility Inventory Database UST (CA FID UST) site, a Historic UST (HIST UST) site, and a Statewide Environmental Evaluation and Planning System UST (SWEEPS UST) site, which is further discussed in Section 5.1.

The immediately surrounding properties consist of the following:

Direction from Site	Address-Tenant/Use
Northwest	Casa Grande Road, followed by Skoff Trucking (1 Casa Grande Road)
North	Park Central Apartments (1400 Technology Lane)
Northeast	Vacant Commercial/Industrial Building (1450 Technology Lane)
South	Vacant marsh land with a public access trail running through it, followed by the Petaluma River (no address available)
Southwest	Rocky Memorial Dog Park (former Casa Grande Landfill) 2204 Casa Grande Road
West	Casa Grande Road, followed by Michal Paul Co. Construction Company (1200 Casa Grande Road)

The adjacent site to the northwest, 1 Casa Grande Road, was identified in the regulatory database as a Hist Cortese, LUST, Aboveground Storage Tank (AST), SWEEPS UST, Enforcement (ENF), CA FID UST, and UST site. Please refer to Section 5.1.

The adjacent site to the southwest, the former Casa Grande Landfill, was identified in the regulatory database as a Solid Waste Information System (SWF/LF), Envirostor, and Financial Assurance site. Please refer to Section 5.1.

Based upon groundwater monitoring data conducted on the subject property (Royal Tallow and Soap Company Underground Storage Tank Site Characterization Report, August 17, 1990), the direction of groundwater flow beneath the subject property is inferred to be to the south and southwest. Based on the same information, groundwater is presumed to be present at an estimated depth of three to five feet below ground surface (bgs).

FINDINGS

Recognized Environmental Conditions (RECs) are defined by the ASTM Standard Practice E1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. AEI's assessment has revealed the following RECs associated with the subject property or nearby properties:

- Based on the review of topographic maps, a railroad line ran along the northern boundary of the subject property from at least 1914 until at least 1980. In addition, a map on file with the Sonoma County Environmental Health Division (SCEHD) from 2000 notes that the northern portion of the property was formerly the Northwestern Pacific Railroad Right of Way (please refer to Appendix D). According to Mr. Patrick Imbimbo of Baywood, this area was developed with a railroad spur which was removed by Baywood sometime around 2008. It is possible that shipments were delivered to the subject property via this spur. In addition, railroad spurs represent potential environmental concerns due to the historical practice of application of oils that may have contained polychlorinated biphenyls (PCBs), herbicides, and arsenic for pest and weed control, as well as the potential presence of creosote on the rail ties, and the historical common practice of using coal cinders for track fill material. AEI understands that the subject property is slated for residential redevelopment. Consequently, AEI recommends the soil sampling to assess whether the subject property has been significantly impacted in connection with the historical railroad spur on the north portion of the property.
- Based on an interview with a former Royal Tallow and Soap Company Facility, Mr. Pete Terribilini, the subject property used a septic system and waste water disposal ponds to dispose of waste water on-site. Mr. Terribilini explained that the tallow facility was washed down once a day, and the water from this process flowed into a clarifier. According to Mr. Terribilini, this room was called the "sewer room," and water from this cleaning process was filled with "tallow and grease" from the plant operations. The water sat in the clarifier for approximately one day, and then the scum was skimmed off the top and the water was allowed to flow into the waste water ponds on the southern portion of the property. Although the majority of the contaminants in this wastewater were likely organic in nature, it is possible that hazardous materials used as part of the rendering process or used on machinery could have been present in the waste water.

In addition, based on a map on file with the SCEHD, two septic tanks were located east adjacent to the main rendering plant, and the leach field extended to the southwest. Since the buildings have been demolished, it is unclear whether the septic system was solely used for restroom purposes, or if other water was discharged into the system. In addition, due to the long industrial nature of the property use and the lack of regulatory oversight it is possible that hazardous materials could have entered the septic system and other waste water ponds. Based on this information, the wastewater discharge from the former facility through the wastewater ponds and the septic system represent an environmental concern. AEI recommends further investigation in the area of the septic leach field, former septic tanks, wastewater clarifier, and wastewater disposal ponds to determine if a release to the subsurface has occurred.

- During remediation of the soils on the subject property in the area of the former USTs (please see Controlled Recognized Environmental Condition Section below) soil borings were advanced and samples were taken from the area of the former truck garage and maintenance building which indicated high levels of TPHg in soil in this area. However, it does not appear that the soils in this area were excavated, and it is likely that contamination remains in place. Based on this information, AEI recommends additional investigation into the soils in the area of the former garage and maintenance building.
- According to Mr. Imbimbo, fill material from off site has been stockpiled on the northern portion of the subject property. The stockpiled material appeared to be approximately ten to 12 feet high. Mr. Imbimbo explained that the soil was deemed as "clean" before it was deposited on the subject property, and there are plans to use the material as fill before redevelopment of the property. However, no information was provided to AEI as to the origin of the material and no soil testing data was available to verify that there are no contaminants in the material. There is the potential that contamination from off-site sources may be present in this material. AEI recommends sampling of the fill material prior to use on the subject property to determine if contamination from off-site is present.
- A large mound (approximately 20 feet high) of construction debris is located on the central portion of the subject property. According to Mr. Imbimbo, this debris has been stored on the subject property by the Soil Land Company from various off-site construction sites. According to Mr. Imbimbo, until approximately one year ago, Soil Land was crushing the material on site and turning it into Class II Aggregate to be reused off-site. Just south of this mound, there is another smaller mound of this Class II Aggregate left over from the crushing operations (composed of cement and concrete). There is a potential that asbestos and/or other potentially hazardous or regulated materials are present in this material. AEI recommends sampling of this material and proper off-site disposal. Based on the levels of residual contamination which remained at the subject property upon regulatory closure in 2004, including 438 ppm of TPHg, a vapor encroachment condition likely exists at the subject property. AEI recommends additional investigation to determine if a VEC exists at the subject property.

Controlled Recognized Environmental Conditions (CRECs) are defined by the ASTM Standard Practice E1527-13 as a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. AEI's assessment has revealed the following CRECs associated with the subject property or nearby properties:

- Based on information available in the Case Closure Summary and Remedial Action Completion Certificate (also on file on the GeoTracker website), one 1,000-gallon UST and one 2,000-gallon UST, both containing regular unleaded gasoline, were removed from the subject property on June 30, 1990. 2,400 cubic yards of soil were treated on-site and used for back-fill. 2,900 parts per million (ppm) of total petroleum hydrocarbons as gas (TPHg), 19.17 ppm benzene, 151 ppm toluene, 303 ppm xylenes, and 61.7 ppm ethylbenzene were found in soil. In addition, 125 ppm TPHg, 21.8 ppm benzene, 16 ppm toluene, 9.52 ppm xylene, 2.2 ppm ethylbenzene, and 0.0067 ppm 1,2-Dichloroethane (1,2-DCA) were found in groundwater. Upon site closure, all contaminants in groundwater were below laboratory reporting limits except 0.0016 ppm of 1,2-DCA. However, significant soil contamination remained on-site upon closure, including 438 ppm of TPHg, 10.4 ppm xylene, and 8.25 ppm ethylbenzene. In addition, soil and groundwater were not tested for TPH diesel (TPHd), oil and grease, or heavy metals, and soil was not tested for the presence of 1,2-DCA.

As a stipulation of site closure, the SCEHD stated that future site development should address the residual soil contamination, including proper handling and disposal. In addition, the SCEHD would require that a Site Safety Plan be developed and implemented before any future redevelopment. Based on this information, the release from the former USTs represents a controlled recognized environmental condition. It is AEI's understanding that the subject property is slated for residential redevelopment. Thus, AEI recommends investigation to assess current conditions associated with this release. In addition, AEI also recommends contacting the SCEHD and completing the necessary Site Safety Plan and any other required documentation.

Historical Recognized Environmental Condition (HREC) is defined by the ASTM Standard Practice E1527-13 as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. AEI's assessment has revealed the following HRECs associated with the subject property or nearby properties:

- No on-site HRECs were identified during the course of this assessment.

Environmental Issues include environmental concerns identified by AEI that warrant discussion, but do not qualify as recognized environmental conditions, as defined by the ASTM Standard Practice E1527-13. These can include, but are not limited to risks which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of the subject property. AEI's assessment has revealed the following environmental issues associated with the subject property or nearby properties:

- No on-site environmental issues were identified during the course of this assessment.

Non-ASTM Considerations may include the presence of environmental conditions such as asbestos containing materials, lead-based paint, radon, mold, lead in drinking water, etc. which can affect the liabilities and financial obligations of the client, the health & safety of site occupants, and the value and marketability of the subject property. AEI's assessment has revealed the following Non-ASTM considerations associated with the subject property or nearby properties:

- Mr. Imbimbo explained to AEI that the western portion of the subject property is part of the National Wetland Inventory. This was confirmed in the regulatory database vicinity map,

which shows that the southern portion of the property is also considered to be a wetland. No hazardous materials or petroleum products were observed on the standing water or these wetland areas. Therefore, these areas are not expected to represent a significant environmental concern. However, AEI understands that the subject property is slated for redevelopment. AEI recommends contacting the local planning and/or building departments to determine whether a Wetlands Delineation report is required and if mitigation is required in order to develop in these areas.

CONCLUSIONS, OPINIONS AND RECOMMENDATIONS

We have performed a Phase I Environmental Site Assessment for the property located at 2592 Lakeville Highway in the City of Petaluma, Sonoma County, California, in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312). Any exceptions to, or deletions from, this practice are described in Section 1.3 of this report. This assessment has revealed no evidence of RECs or CRECs in connection with the property except for those previously identified in the *Findings* section. AEI recommends additional investigation into the environmental conditions identified associated with the former use of the subject property by the Royal Tallow and Soap Company.

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1.0 INTRODUCTION

This report documents the methods and findings of the Phase I Environmental Site Assessment (ESA) performed in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) for the property located at 2592 Lakeville Highway in the City of Petaluma, Sonoma County, California (Figure 1: Site Location Map, Figure 2: Site Map, and Appendix A: Property Photographs).

1.1 SCOPE OF WORK

The purpose of the Phase I Environmental Site Assessment is to assist the client in identifying potential environmental liabilities associated with the presence of any hazardous substances or petroleum products, their use, storage, and disposal at and in the vicinity of the subject property, as well as regulatory non-compliance that may have occurred at the subject property. Property assessment activities focused on: 1) a review of federal, state, tribal and local databases that identify and describe underground fuel tank sites, leaking underground fuel tank sites, hazardous waste generation sites, and hazardous waste storage and disposal facility sites within the ASTM approximate minimum search distance; 2) a property and surrounding site reconnaissance, and interviews with the past and present owners and current occupants and operators to identify potential environmental contamination; and 3) a review of historical sources to help ascertain previous land use at the site and in the surrounding area.

The goal of AEI Consultants in conducting the Phase I Environmental Site Assessment was to identify the presence or likely presence of any hazardous substances or petroleum products on the property that may indicate an existing release, a past release, or a material threat of a release of any hazardous substance or petroleum product into the soil, groundwater, or surface water of the property.

1.2 SIGNIFICANT ASSUMPTIONS

The following assumptions are made by AEI Consultants in this report. AEI Consultants relied on information derived from secondary sources including governmental agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, and personal interviews. AEI Consultants has reviewed and evaluated the thoroughness and reliability of the information derived from secondary sources including governmental agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, or personal interviews. It appears that all information obtained from outside sources and reviewed for this assessment is thorough and reliable. However, AEI cannot guarantee the thoroughness or reliability of this information.

Groundwater flow and depth to groundwater, unless otherwise specified by on-site well data, or well data from adjacent sites are assumed based on contours depicted on the United States Geological Survey topographic maps. AEI Consultants assumes the property has been correctly and accurately identified by the client, designated representative of the client, property contact, property owner, and property owner's representatives.

1.3 LIMITATIONS

Property conditions, as well as local, state, tribal and federal regulations can change significantly over time. Therefore, the recommendations and conclusions presented as a result of this study apply strictly to the environmental regulations and property conditions existing at the time the study was performed. Available information has been analyzed using currently accepted assessment techniques and it is believed that the inferences made are reasonably representative of the property. AEI Consultants makes no warranty, expressed or implied, except that the services have been performed in accordance with generally accepted environmental property assessment practices applicable at the time and location of the study.

Considerations identified by ASTM as beyond the scope of a Phase I ESA that may affect business environmental risk at a given property include the following: asbestos-containing materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, mold, vapor intrusion, and high voltage lines. These environmental issues or conditions may warrant assessment based on the type of the property transaction; however, they are considered non-scope issues under ASTM Standard Practice E1527-13.

If requested by the client, these non-scope issues are discussed in Section 7.2. Otherwise, the purpose of this assessment is solely to satisfy one of the requirements for qualification of the innocent landowner defense, contiguous property owner or bona fide prospective purchaser under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). ASTM Standard Practice E1527-13 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) constitute the "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in:

- 1) 42 U.S.C § 9601(35)(B), referenced in the ASTM Standard Practice E1527-13.
- 2) Sections 101(35)(B) (ii) and (iii) of CERCLA and referenced in the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312).
- 3) 42 U.S.C. 9601(40) and 42 U.S.C. 9607(q).

The Phase I Environmental Site Assessment is not, and should not be construed as, a warranty or guarantee about the presence or absence of environmental contaminants that may affect the property. Neither is the assessment intended to assure clear title to the property in question. The sole purpose of assessment into property title records is to ascertain a historical basis of prior land use. All findings, conclusions, and recommendations stated in this report are based upon facts, circumstances, and industry-accepted procedures for such services as they existed at the time this report was prepared (i.e., federal, state, and local laws, rules, regulations, market conditions, economic conditions, political climate, and other applicable matters). All findings, conclusions, and recommendations stated in this report are based on the data and information provided, and observations and conditions that existed on the date and time of the property visit.

Responses received from local, state, or federal agencies or other secondary sources of information after the issuance of this report may change certain facts, findings, conclusions, or circumstances to the report. A change in any fact, circumstance, or industry-accepted

procedure upon which this report was based may adversely affect the findings, conclusions, and recommendations expressed in this report.

1.4 LIMITING CONDITIONS/DEVIATIONS

The performance of this Phase I Environmental Site Assessment was limited by the following conditions:

- On March 11, 2014, the United States Environmental Protection Agency (US EPA) was contacted for information on the subject property. However, as of this writing, no response has been received from the US EPA. Upon receiving pertinent information in connection with the subject property, AEI will immediately issue an addendum to this report if items of environmental concern are identified. However, based on the quality of information obtained from other sources, this limitation is not expected to significantly alter the findings of this assessment.
- On March 11, 2014, the Department of Toxic Substance Control (DTSC) and City of Petaluma Department of Parks and Recreation (CPDPR) were contacted for information pertaining to the adjacent site to the west, Rocky Memorial Dog Park. Upon receiving pertinent information in connection with the subject property, AEI will immediately issue an addendum to this report if items of environmental concern are identified.
- Due to the size of the subject property, AEI performed a site inspection of the property utilizing a field technique of traversing the site in an attempt to provide an overlapping field of view. Due to the size of the property and the vegetation present on site, isolated areas of the site may have not been accessible for direct observation during AEI's inspection.
- During on-site reconnaissance, AEI was not granted access into the trailer located on the northern portion of the property. According to Mr. Patrick Imbimbo of Baywood, the trailer is only used by the subject property caretaker for residential activities. Based on this information, this limitation is not expected to significantly alter the findings of this assessment.

1.5 DATA GAPS AND DATA FAILURE

According to ASTM E1527-13, data gaps occur when the Environmental Professional is unable to obtain information required, despite good faith efforts to gather such information.

Data failure is one type of data gap. According to ASTM E1527-13 "data failure occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met". Pursuant to ASTM Standards, historical sources are required to document property use back to the property's first developed use or back to 1940, whichever is earlier.

The following data gaps were identified during the course of this assessment:

Data Gap:	The subject property is depicted as developed with a small structure and a dirt road in historical topographic maps from 1914 to 1940. In the 1955 map, the subject property is developed with the royal Tallow and Soap Company facility. Tenancy of the subject property is unknown from 1914 to 1940. The lack of historical sources dating back to first developed use and information regarding historical tenancy between 1914 to 1940 represent historical data gaps. If the User of this report desires a greater degree of certainty regarding the use of the subject property during this time period, additional city directories or a chain of title report may provide evidence of how the property was used.			
Does this data gap affect the EP's ability to identify RECs?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Rationale	Groundwater monitoring and soil sampling was done of the subject property in relation to the leaking underground storage tanks from the Royal Tallow facility, and no evidence was found that contamination from a different facility is present on the subject property.			
Information/ sources consulted	Historic Topographic Maps, Sanborn Maps, Aerial Photographs, City Directories, Previous Reports, Agency Records			

1.6 RELIANCE

All reports, both verbal and written, are for the benefit of De Nova Homes. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms & Conditions executed by DeNova Homes on February 18, 2014. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

2.0 SITE AND VICINITY DESCRIPTION

2.1 SITE LOCATION AND DESCRIPTION

The subject property, which consists of vacant land, is located to the south of Lakeville Highway and southeast of Casa Grande Road, in a mixed commercial and residential area of Petaluma, California. The property totals approximately 13 acres and is not improved with any permanent structures. The subject property is currently occupied by a residential tenant living in a motor home parked on-site. The property is improved with a concrete driveway leading to the property from Casa Grande Road and is surrounded with a barbed wire fence.

The subject property was identified in the databases reviewed as a Comprehensive Environmental Response Compensation and Liability Information System No Further Remedial Action Planned (CERC-NFRAP) site, a RGA Leaking Underground Storage Tank (LUST) site (three times), a Facility and Manifest Data (HAZNET) site (three times), Historic Cortese site, a LUST site (twice), an Envirostor (with the Department of Toxic Substance Control [DTSC]) site, a California Facility Inventory Database UST (CA FID UST) site, a Historic UST (HIST UST) site, and a Statewide Environmental Evaluation and Planning System UST (SWEEPS UST) site, and is further discussed in Section 5.1.

The Assessor's Parcel Number (APN) for the subject property is 005-060-041 and 005-060-042. However, according to Mr. Derek Pampe of DeNova Homes, the southern portion of parcel 005-060-042 is considered a legal waterway and is slated to be handed over to the State of California within the next three years. This portion of the property was not included in this assessment. According to Mr. Patrick Imbimbo of Baywood, limited electricity is provided to the subject property by Pacific Gas and Electric (PG&E), and potable water is provided by the City of Petaluma. According to Mr. Imbimbo, the property is not connected to the municipal sewer.

Refer to Figure 1: Site Location Map, Figure 2: Site Map, and Appendix A: Property Photographs for site location.

2.2 SITE AND VICINITY CHARACTERISTICS

The immediately surrounding properties consist of the following:

Direction from Site	Address-Tenant/Use
Northwest	Casa Grande Road, followed by Skoff Trucking (1 Casa Grande Road)
North	Park Central Apartments (1400 Technology Lane)
Northeast	Vacant Commercial/Industrial Building (1450 Technology Lane)
South	Vacant marsh land with a public access trail running through it, followed by the Petaluma River (no address available)
Southwest	Rocky Memorial Dog Park (former Casa Grande Landfill) 2204 Casa Grande Road
West	Casa Grande Road, followed by Michal Paul Co. Construction Company (1200 Casa Grande Road)

The adjacent site to the northwest, 1 Casa Grande Road, was identified in the regulatory database as a Hist Cortese, LUST, Aboveground Storage Tank (AST), SWEEPS UST, Enforcement (ENF), CA FID UST, and UST site. Please refer to Section 5.1.

The adjacent site to the southwest, the former Casa Grande Landfill, was identified in the regulatory database as a Solid Waste Information System (SWF/LF), Envirostor, and Financial Assurance site. Please refer to Section 5.1.

2.3 PHYSICAL SETTING

<p>Geology: According to information obtained from the United States Geological Survey (USGS), the area surrounding the subject property is underlain by alluvial deposits of the Holocene-era.</p> <p>Based on a review of the United States Department of Agriculture (USDA) Soil Survey for the area of the subject property, the soils in the vicinity of the subject property are classified as the Clear Lake Clay Series. Soils from this series are characterized as a clay.</p>	
USGS Topographic Map:	Petaluma River Quadrangle
Nearest surface water to subject property:	Stream Leading to the Petaluma River/Adjacent to the West and Southwest of the Subject Property
Gradient Direction/Source:	Southwest/Groundwater Investigations for the Subject Property
Estimated Depth to Groundwater/Source:	3 to 5 feet bgs/ <i>Royal Tallow and Soap Company Underground Storage Tank Site Characterization Report Petaluma, California</i> , prepared by Environment and Ecology, Inc. (August 17, 1990)

3.0 HISTORICAL REVIEW OF SITE AND VICINITY

3.1 HISTORICAL SUMMARY

Reasonably ascertainable standard historical sources as outlined in ASTM Standard E1527-13 were used to determine previous uses and occupancies of the subject property that are likely to have led to RECs in connection with the subject property. A chronological summary of historical data found, including but not limited to aerial photographs, historic city directories, Sanborn fire insurance maps and agency records is as follows:

Date Range	Subject Property Description/Use	Source(s)
1955 to 1989	Royal Tallow and Soap Company	Aerial Photographs, City Directories, Topographic Maps, and Agency Records
1989 to 2008	Vacant Tallow Facility	Aerial Photographs, City Directories, and Agency Records
2008 to Present	Vacant Land	Aerial Photographs and Agency Records

According to historical sources, the current property has been vacant land since the former Royal Tallow and Soap Company buildings were demolished in 2008. The subject property was occupied by the Royal Tallow and Soap Company from at least 1955 to 1986 when operations ceased. A small structure and a dirt road were identified on the subject property in historic topographic maps from at least 1914 to 1940, although the occupancy of the property at this time was not identified during the historical research for this report and constitutes a significant data gap. Please refer to Section 1.5 for further discussion.

Based on a review of historical sources, the following historical/additional addresses were associated with the subject property: 0 Casa Grande Road, 2044 Casa Grande Road, and 2044 Lakeville Highway. These addresses were also researched as part of this assessment.

Please refer to Section 4.1.1 for further discussion of the environmental concerns associated with the former use of the subject property by the Royal Tallow and Soap Company.

If available, copies of historical sources are provided in the report appendices.

3.2 AERIAL PHOTOGRAPH REVIEW

AEI Consultants reviewed aerial photographs of the subject property and surrounding area. Aerial photographs were reviewed for the following years:

Date(s)	Subject Property Description	Surrounding Area Descriptions
1953	Developed with the Royal Tallow and Soap Company buildings. Most buildings are concentrated on the northern part of the subject property. Collection ponds appear to be located on the southeastern portion of the property.	Northwest: A road, followed by what appears to be graded land. North: Agricultural land Northeast: Agricultural land South: Vacant land Southwest: Possibly developed with the landfill, no structures are visible West: Graded land

1965	Developed with the Royal Tallow and Soap Company Facility. The structures are clustered on the north western portion of the property with a large structure towards the southeastern portion of the property. Two large detention ponds are located on the southern portion of the property. One possible detention pond is on the western side of the subject property.	Northwest: A road, followed by the existing trucking company structures North: No significant changes Northeast: No significant changes South: Agricultural land Southwest: Developed as a landfill (partial coverage) West: Graded land (partial coverage)
1982	No significant changes. However, due to the quality of the aerial photograph, many details are not discernible.	Northwest: No significant changes North: No significant changes Northeast: No significant changes South: No significant changes Southwest: No significant changes West: A road, followed by the existing structure
1993	Developed with the Royal Tallow and Soap Company structures. Buildings are clustered on the northeastern portion of the property. The large building on the southeastern portion of the property is gone, as are the detention ponds.	Northwest: No significant changes North: Vacant land Northeast: Vacant land South: No significant changes Southwest: No significant changes West: A road, followed by the existing structure
1998	No significant changes	Northwest: No significant changes North: No significant changes Northeast: No significant changes South: No significant changes Southwest: Developed with the existing dog park West: No significant changes
2012	All structures are gone from the property. Large piles of debris are clustered on the central portion of the property. A small pond is located on the southern portion of the property.	Northwest: No significant changes North: Developed with the existing apartment buildings Northeast: Developed with the existing commercial/industrial building South: No significant changes Southwest: No significant changes West: No significant changes

Based on the review of aerial photographs, the Royal Tallow and Soap Company operated on the subject property since at least 1953. Please refer to Section 4.1.1 for further discussion of the environmental concerns associated with this facility.

3.3 SANBORN FIRE INSURANCE MAPS

Sanborn Fire Insurance maps were developed in the late 1800s and early 1900s for use as an assessment tool for fire insurance rates in urbanized areas. A search was made of Seattle Public Library's collection of Sanborn Fire Insurance maps.

Sanborn map coverage was not available for the subject property.

3.4 CITY DIRECTORIES

A search of AEI's collection of historic Haine's Criss-Cross city directories was conducted for the subject property at. Directories were available and reviewed for the years 1972, 1976, 1981, 1986, 1991, 1996, 2001, and 2006. The following table summarizes the results of the city directory search.

City Directory Search Results for 2592 Lakeville Highway

Date(s)	Occupant Listed
1972, 1976, 1981, 1986	Royal Tallow & Soap, Terrinilini [<i>sic.</i>] Pete.
1991, 1996, 2001	Terrinilini [<i>sic.</i>] Pete.
2006	Address not listed.

Based on the review of historic city directories, the subject property was occupied by the Royal Tallow and Soap facility from at least 1972 to 1986. Please refer to Section 4.1.1 for further discussion of the environmental concerns associated with this facility.

3.5 HISTORICAL TOPOGRAPHIC MAPS

A search of HistoricAerials.com's historical topographic maps was conducted for the subject property. Topographic maps were reviewed for the following years:

Date(s)	Subject Property Description	Surrounding Area Descriptions
1914 1924 1940	The southern portion of the property appears to be a submerged marsh of the Petaluma River. A dirt/unimproved road leads to a structure on the northeastern portion of the subject property. A railroad track runs along the northern portion of the property. The area around the subject property is labeled as "Newtown"	Northwest: Dirt road, followed by vacant land North: Railroad tracks, followed by vacant land Northeast: Railroad tracks, followed by vacant land South: Submerged marshes followed by the Petaluma River Southwest: Submerged marshes followed by the Petaluma River West: Railroad tracks and a road, followed by vacant land
1955 1962	Developed with four large structures and one smaller structure on the northern portion of the property with a light duty road leading to them. A land grant, mining claim, donation land claim, or tract line runs through the property (it is not clear which of these this is).	Northwest: Light duty road, followed by two structures North: Railroad tracks, followed by vacant land Northeast: Railroad tracks, followed by vacant land South: Vacant land, followed by the Petaluma River Southwest: Developed with one structure (landfill not identified) West: Railroad tracks and a road, followed by vacant land
1969	Developed with three additional buildings on the northern portion of the property. Two ponds are also depicted on the southern portion of the property.	Northwest: Light duty road, followed by three structures North: Railroad tracks, followed by vacant land Northeast: Railroad tracks, followed by vacant land South: Vacant land, followed by the Petaluma River Southwest: Developed with one structure (landfill not identified) West: Railroad tracks and a road, followed by vacant land

1975	No significant changes, except one more pond is depicted.	No significant changes
1980	No significant changes, except the railroad tracks end at the light duty road and don't travel adjacent to the subject property any longer.	No significant changes

Due to proprietary consideration, copies of these maps are not provided in the appendices.

Based on the review of topographic maps, a railroad line ran along the northern boundary of the subject property from at least 1914 until at least 1980. In addition, a map on file with the GeoTracker website for the subject property notes that the northern portion of the property was formerly the Northwestern Pacific Railroad Right of Way (please refer to Appendix D). According to Mr. Patrick Imbimbo of Baywood, this area was developed with a railroad spur which was removed by Baywood sometime around 2008. It is possible that shipments were delivered to the subject property via this spur. In addition, railroad spurs represent potential environmental concerns due to the historical application of oils containing polychlorinated biphenyls (PCBs), herbicides, and arsenic for pest and weed control, as well as the potential presence of creosote on the rail ties, and the historical common practice of using coal cinders for track fill material. However, it is likely that any potential herbicide concentrations have degraded over time, as the railroad spur is no longer on-site and had not been used since at least 1986. Although any potential PCB or arsenic concentrations resulting from the railroad spur would likely be confined to the near subsurface sediments, AEI understands that the subject property is slated for residential redevelopment. Consequently, AEI recommends the performance of on-site sampling to determine if the subject property has been significantly impacted in connection with the historical railroad spur on the north portion of the property.

3.6 CHAIN OF TITLE

In accordance with our approved scope of services, a Chain of Title search was not performed as part of this assessment.

4.0 REGULATORY AGENCY RECORDS REVIEW

4.1 REGULATORY AGENCIES

Local and state agencies, such as environmental health departments, fire prevention bureaus, and building and planning departments are contacted to identify any current or previous reports of hazardous materials use, storage, and/or unauthorized releases that may have impacted the subject property. In addition, information pertaining to Activity and Use Limitations (AULs), defined as legal or physical restrictions, or limitations on the use of, or access to, a site or facility, is requested.

4.1.1 HEALTH DEPARTMENT

On March 10, 2014, AEI visited the Sonoma County Environmental Health Division (SCEHD) for information on the subject property and nearby sites of concern. Files at this agency may contain information regarding hazardous materials storage, as well as information regarding unauthorized releases of petroleum hydrocarbons or other contaminants that may affect the soil or groundwater in the area.

Date	Business	Document type	Document Notes/Violations
01/09/1986	Royal Tallow and Soap Company	Application for Permit to Operate USTs	Not approved based on a number of documents and UST leak detection documentation missing.
02/22/1989	Royal Tallow and Soap Company	Correspondence	States that the Royal Tallow and Soap Company operated on-site until 1986.
03/30/1989	Royal Tallow and Soap Company	UST Permit Application	2,000-gallon UST was installed in 1973 or 1979 (both dates listed) and has never stored other chemicals. The 1,000-gallon tank is listed as over 31 years old
06/30/1989	Royal Tallow and Soap Company	UST Field Inspection Report	Inspection related to UST removal – notes that holes were visible in both tanks. Backfill was contaminated and free product observed in water in pit. Three domestic wells noted on the east side of the property, however none are used.
07/14/1989	Royal Tallow and Soap Company	Initial Laboratory Analysis Results	A maximum of 820 ppm of total petroleum hydrocarbons as gasoline (TPHg) was found, as well as a maximum of 110 ppm of BTEX in soil.
10/30/2000	Royal Tallow and Soap Company	Response to Workplan	States that the truck scale on the subject property extended greater than five feet before removal. By removing this scale, soil hazards do not need to be documented between the 4.5 and 10 feet interval.

Date	Business	Document type	Document Notes/Violations
06/11/2001	Former Royal Tallow and Soap Company	Soil Excavation and Exploratory Soil Borings	SCEHD did not have the entire report on file, but did have a map of the borings and excavation area. Noted that high levels of TPHg were found in the borings underneath the former truck storage and maintenance building, however soil in this area were not excavated, and data was mission from one of the borings.
06/15/2004	Former Royal Tallow and Soap Company	Monitoring Well Decommissioning	Five monitoring wells were decommissioned in May of 2004.

In addition to the above documents reviewed, AEI also reviewed a map of the former Royal Tallow and Soap Company facility on file with the SCEHD. The map shows the location of the former USTs, as well as the railroad spur located on the very northern portion of the property. Please refer to Section 3.5 for further discussion of the environmental concerns associated with the former railroad spur. In addition, the map notes the location of a condensing vat and wastewater sump, with a pipe leading to waste disposal lagoons. Based on this information and an interview with the former plant superintendent for the Royal Tallow and Soap Company, these ponds stored wastewater from the cleaning of the facility. Please refer to Section 6.1.4 for further discussion of the environmental concerns associated with these waste ponds.

This map also shows the location of the former septic system used on the subject property. Please refer to Section 6.1.3 for further discussion of the environmental concerns associated with the former septic system.

Based on information available in the Case Closure Summary and Remedial Action Completion Certificate (also on file on the GeoTracker website), one 1,000-gallon UST and one 2,000-gallon UST, both containing regular unleaded gasoline, were removed from the subject property on June 30, 1990. 2,400 cubic yards of soil were treated on-site and used for back-fill. 2,900 parts per million (ppm) of total petroleum hydrocarbons as gas (TPHg), 19.17 ppm benzene, 151 ppm toluene, 303 ppm xylenes, and 61.7 ppm ethylbenzene were found in soil. In addition, 125 ppm TPHg, 21.8 ppm benzene, 16 ppm toluene, 9.52 ppm xylene, 2.2 ppm ethylbenzene, and 0.0067 ppm 1,2-Dichloroethane (1,2-DCA) were found in groundwater. Upon site closure, all contaminants in groundwater were below laboratory reporting limits except 0.0016 ppm of 1,2-DCA. However, significant soil contamination remained on-site upon closure, including 438 ppm of TPHg, 10.4 ppm xylene, and 8.25 ppm ethylbenzene. In addition, soil and groundwater were not tested for TPH diesel (TPHd), oil and grease, or heavy metals, and soil was not tested for the presence of 1,2-DCA.

As a stipulation of site closure, the SCEHD stated that future site development should address the residual soil contamination, including the proper handling and disposal. In addition, the SCEHD would require that a Site Safety Plan be developed and implemented before any future redevelopment. Based on this information, the release from the former USTs represents a controlled recognized environmental condition. It is AEI's understanding that the subject property is slated for residential redevelopment. Thus, AEI recommends additional investigation into the residual soil contamination on-site for the protection of the construction workers and

future occupants of the subject property. In addition, AEI also recommends contacting the SCEHD and completing the necessary Site Safety Plan and any other required documentation.

In addition, during remediation of the soils on the subject property in the area of the former USTs, soil borings were taken from the area of the former truck garage and maintenance building which indicated high levels of TPHg in soil in this area as well. However, it does not appear that the soils in this area were excavated, and it is likely that contamination remains in place. Based on this information, AEI recommends additional investigation into the soils in the area of the former garage and maintenance building.

4.1.2 FIRE DEPARTMENT

On March 10, 2014, AEI visited the Petaluma Fire Department (PFD) for information on the subject property to identify any evidence of previous or current hazardous material usage.

Date	Business	Document type	Document Notes/Violations
10/10/1975	N/A	Site Design and Review	Review for a proposed de-boning facility to be located adjacent to the subject property. States that holding ponds on the southeast portion of the property supplied water for the subject property operations and fire protection.
06/31/1989	Royal Tallow and Soap Company	UST Maintenance Application	Application for the removal of two USTs, one 1,000-gallon and one 2,000-gallon
10/15/1990	Former Royal Tallow and Soap Company	Site Investigation	Requires a work plan to be submitted for additional remediation at the site including groundwater monitoring and the disposal of contaminated soil before the rainy season.
06/12/1991	N/A	Lakeville Highway Road Widening	States the petroleum hydrocarbon contamination exists at the subject property, but it is not near enough to the highway to affect the roadway widening project

Based on the 1975 report for the adjacent facility, the ponds that were visible in aerial photographs were used for holding water for use by the Royal Tallow and Soap Company facility. However, interviews with the former plan superintendant Mr. Pete Terribilini and past investigations on the subject property indicate that these ponds were used for waste water storage. Please refer to Section 6.1.4 for further discussion.

Please refer to Section 4.1.1 for further discussion of the former USTs on the subject property.

4.1.3 BUILDING DEPARTMENT

On February 24, 2014, AEI contacted the Petaluma Building Department (PBD) for information on the subject property in order to identify historical tenants and property use. Please refer to the following table for a listing of permits reviewed:

Building Permits Reviewed for 0 Casa Grande Road, 2044 Casa Grande Road, 2044 Lakeville Highway, and 2592 Lakeville Highway

Year(s)	Owner/Applicant	Description of Permit/Building Use
2003	Darling Delaware Company Inc.	Notice and Order per the Abatement of Dangerous Buildings. States that there is a single family residence on the property and the abandoned tallow plant and barns. Determined that the buildings need to be demolished – the buildings must be vacated in 60 days.
2003	2044 Casa Grande Road	Complaint from a citizen that a structure on the property line is disintegrating and falling onto the fence, there are hazardous materials on-site that need to be removed and cleaned up, the main building is not secure and is an attractive nuisance, children are accessing the property and buildings.
2003	Darling Delaware Company Inc.	Letter that states that in 2001, a permit was applied for to demolish a truck garage and remove contaminated soil from underneath it. The inspection was never completed and the city is concerned that the area is an eyesore to the newly constructed apartment buildings.
2008	Daniel O Davis Inc.	Asbestos removal demolition plan with the Bay Area Air Quality Management District
2008	Lands of Baywood, LLC	Permit to demolish and remove commercial facility building, to clean dirt, and to clear the property of miscellaneous debris
2008	0 Casa Grande AKA 2044 Lakeville Highway (Royal Tallow)	Stockpiling permit
2009	Lands of Baywood, LLC	Letter asking if the demolition work has been completed because no building inspection was arranged.

Based on the review of PBD documents, the Royal Tallow and Soap Company buildings remained on the subject property until 2008 when they were demolished. Please refer to Section 4.1.1 for further discussion of the environmental concerns associated with the former Royal Tallow and Soap Company Facility.

4.1.4 PLANNING DEPARTMENT

On March 13, 2014, AEI contacted the Petaluma Planning Department (PPD) for information on the subject property in order to identify AULs associated with the subject property.

No information indicating the existence of AULs was on file for the subject property with the PPD. According to Ms. Ellen Hill with the PPD, the subject property is zoned for high density residential use.

4.1.5 COUNTY ASSESSOR OFFICE

On February 21, 2014, AEI visited the website maintained by the Sonoma County Assessor's Office for information on the subject property in order to determine the earliest recorded date of development and use.

According to the Sonoma County Assessor's Office, the subject property APNs are 005-060-041 and 0050-060-042 and the property was formerly under the APN 0050-060-130. No information about the first date of development was available from the Sonoma County Assessor's Office.

4.1.6 DEPARTMENT OF OIL AND GAS

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) maps concerning the subject property and nearby properties was reviewed. DOGGR maps contain information regarding oil and gas development.

According to the DOGGR Online Mapping System, there are no oil or gas wells within 500 feet of the subject property. No environmental concerns were noted during the DOGGR map review.

4.1.7 OTHER AGENCIES SEARCHED

On **March 10, 2014**, AEI visited the **GeoTracker** website maintained by the **Regional Water Quality Control Board (RWQCB)** for information regarding unauthorized releases of hazardous materials to the groundwater. Cases typically handled by the RWQCB include releases from USTs.

AEI reviewed the Case Closure Summary and Remedial Action Completion Certificate and the Geo Map on file on the **GeoTracker** website. Please refer to Section 4.1.1 for further discussion of this closed LUST case and the environmental concerns associated with the former USTs on the subject property.

On **February 24, 2014**, AEI contacted **The Bay Area Air Quality Management District (BAAQMD)** for information regarding any records of Permits to Operate (PTO), Notices of Violation (NOV), or Notices to Comply (NTC) issued to occupants of the subject property and associated with air emissions equipment primarily related to stationary sources of air pollution, such as dry cleaning machines, boiler, and/or underground storage tanks (USTs) .

According to records on file with the **BAAQMD**, the Royal Tallow and Soap Company facility ceased operations on October 31, 1986. In addition, their first application with the BAAQMD was November 11, 1978. No other information was available from the BAAQMD. Please refer to Section 4.1.1 for further discussion of the environmental concerns associated with the former Royal Tallow and Soap Company Facility.

On **February 21, 2014**, AEI visited the **Hazardous Waste Tracking System (HWTS)** online database maintained by the **California Department of Toxic Substances Control (DTSC)** for information regarding documented hazardous wastes generated at the subject property.

The subject property was identified four times in the **HWTS** online database. These records indicate that from 2000 to 2001, over 17 tons of hazardous wastes were generated at the subject property by Darling International. These wastes were likely associated with the clean-up and remediation of the former Royal Tallow and Soap Company facility. Please refer to Section 4.1.1 for further discussion of the environmental concerns associate with the former occupancy of the subject property by the Royal Tallow and Soap Company.

On **February 21, 2014**, AEI visited the **EnviroStor** website maintained by the **California Department of Toxic Substances Control (DTSC)** for information indication any release of hazardous materials on the subject property.

No information indicating any release of hazardous materials on the subject property was found on the **EnviroStor** website.

On **February 21, 2014**, AEI contacted the **DTSC** for information indication any release of hazardous materials on the subject property.

AEI reviewed the one record on file with the **DTSC**, however the records only indicated Royal Tallow and Soap Company closed the facility in 1986.

On **March 7, 2014**, AEI contacted the **San Francisco Bay Area Regional Water Quality Control Board (SF RWQCB)** for information regarding ASTs, USTs, hazardous materials storage, industrial waste discharges, and/or releases at the subject property.

No records were on file with the **SF RWQCB** for the subject property.

On **March 11, 2014**, AEI contacted the **United States Environmental Protection Agency (US EPA)** for information regarding ASTs, USTs, hazardous materials storage, industrial waste discharges, and/or releases at the subject property. However, as of this writing, no response has been received from the **US EPA**. Upon receiving pertinent information in connection with the subject property, AEI will immediately issue an addendum to this report if items of environmental concern are identified. However, based on the quality of information obtained from other sources, this limitation is not expected to significantly alter the findings of this assessment.

5.0 REGULATORY DATABASE RECORDS REVIEW

AEI contracted Environmental Data Resources (EDR) to conduct a search of federal, state, tribal, and local databases containing known and suspected sites of environmental contamination. The number of listed sites identified within the approximate minimum search distance (AMSD) from the Federal and State environmental records database listings specified in ASTM Standard E 1527-13 are summarized in the following table. A copy of the regulatory database report is included in Appendix B of this report.

The subject property was identified in the databases reviewed as a CERC-NFRAP, RGA LUST (three times), HAZNET (three times), Historic Cortese, LUST (twice), Envirostor, CA FID UST, HIST UST, and a SWEEPS UST site. Please see Section 5.1 for additional discussion.

In determining if a site is a potential environmental concern to the subject property in the records summary table below, AEI has applied the following criteria to classify the site(s) as low concern: 1) the site(s) only hold an operating permit (which does not imply a release), 2) the site(s) have been granted "No Further Action" by the appropriate regulatory agency, and/or 3) based upon AEI's review, the distance and/or topographic position relative to the subject property reduce the level of risk associated with the site(s).

5.1 RECORDS SUMMARY

Database	Search Distance (Miles)	Subject Property Listed	Total Number of Listings	Recognized Environmental Condition or Environmental Issue (Yes/No)
NPL	1	No	1	No, please see discussion below.
DELISTED NPL	0.5	No	0	
CERCLIS	0.5	No	2	No, please see discussion below.
CERCLIS NFRAP	0.5	Yes	1	Please see a discussion of the subject property below.
RCRA CORRACTS	1	No	0	
RCRA-TSD	0.5	No	0	
RCRA LQG, SOG, VGN, NLR	TP/ADJ	No	1	No, please see discussion below.
US ENG CONTROLS	TP	No	0	
US INST CONTROLS	TP	No	0	
ERNS	TP	No	0	

Database	Search Distance (Miles)	Subject Property Listed	Total Number of Listings	Recognized Environmental Condition or Environmental Issue (Yes/No)
STATE/TRIBAL HWS	1	Yes	8	Please see a discussion of the subject property below. None of the nearby sites are expected to represent a significant environmental concern.
STATE/TRIBAL SWLF	0.5	No	2	Please see a discussion of the adjacent site below.
STATE/TRIBAL REGISTERED STORAGE TANKS	TP/ADJ	No	2	No, please see discussion below.
STATE/TRIBAL LUST	0.5	Yes	18	Please see a discussion of the subject property below. None of the nearby sites are expected to represent a significant environmental concern.
STATE/TRIBAL ENG-INST CONTROLS	TP	No	0	
STATE/TRIBAL VCP	0.5	No	0	
STATE/TRIBAL BROWNFIELD	0.5	No	0	
ORPHAN	N/A	No	20	None of the identified orphan sites are located in the immediate vicinity (500-foot) of the subject property, and therefore, these sites are not expected to represent a significant environmental concern.
NON-ASTM DATABASES	TP/ADJ	Yes	14	Please see a discussion of the subject property and two adjacent sites below.

Site Name: Royal Tallow and Soap Company (also Darling Delaware Royal Tallow and Darling International Inc.)
Database(s): CERC-NFRAP, RGA LUST (three times), HAZNET (three times), Historic Cortese, LUST (twice), Envirostor, CA FID UST, HIST UST, SWEEPS UST
Address: 2592 Lakeville Highway
Distance: Subject Property
Direction: N/A

Comments:
The subject property was occupied by the Royal Tallow and Soap Company facility from at least 1955 to 1986. Please refer to Section 4.1.1 for further discussion of the environmental concerns associated with this facility.

Site Name: Casa Grande Landfill
Database(s): SWF/LF, Envirostor, Financial Assurance
Address: West End of Casa Grande Road (2204 Casa Grande Road)
Distance: Adjacent (directly abutting the subject property)
Direction: West (hydrologically cross-gradient)

Comments:

This site was formerly used as a landfill from an unknown date until its closure in 1993. According to information in the regulatory database, up to 16 cubic yards per day of construction/demolition materials and green materials were disposed of at this site. During off-site reconnaissance, AEI observed signs warning that glass was present in the surface stream dividing the subject property from this site, and also observed shards of glass in the surface soils at this site. This site is currently used at the Rocky Memorial Dog Park which is owned and operated by the City of Petaluma.

On March 11, 2013, AEI requested records for this facility from the DTSC and the City of Petaluma Parks and Recreation Department. As of the writing of this report, no response has yet been received from either of these agencies. Upon receiving pertinent information in connection with the subject property, AEI will immediately issue an addendum to this report if items of environmental concern are identified. However, based on the regulatory status of the site and reported nature of accepted wastes, this site is not expected to represent a significant environmental concern.

Site Name: Skoff Trucking
Database(s): Hist Cortese, LUST, AST, SWEEPS UST, ENF, CA FID UST, UST
Address: 1 Casa Grande Road
Distance: Adjacent (approximately 55 feet)
Direction: Northwest (hydrologically cross-gradient)

Comments:

This site is currently occupied by Skoff Trucking and is used as a truck maintenance and storage facility. AEI reviewed records on file with the GeoTracker website for this site. In 1986, one 1,000-gallon waste oil tank was removed from the site and in 1990 one 500-gallon UST was removed as well. Five monitoring wells were installed on-site from 1990-1991. In 1994, two 1,000-gallon gasoline USTs were removed from the site. In 1998, three 12,000-gallon USTs were removed from the site as well. Both total petroleum hydrocarbons of gas and diesel (TPHg and TPHd) were found in soil after the 1998 UST removal. In 1999, two more gasoline USTs were discovered at the site and removed.

In 2000, a water supply well south of the site was found to be contaminated with TPHg and toluene. This well was destroyed, and soil borings were advanced on the site and two additional monitoring wells installed. Quarterly monitoring of these wells has occurred since 1999. Additional soil excavation at the southern portion of the site was also performed in 2006. This included the removal and disposal of approximately 990 tons of impacted soil.

In addition, in January of 2014, a soil vapor investigation was conducted on the site. No petroleum hydrocarbons constituents were found above laboratory reporting limits in the soil vapor tested. The report concluded that any residual hydrocarbon contamination represents a low risk for vapor intrusion.

In the most recent groundwater monitoring report from November 7, 2013, the monitoring well closest to the subject property on Casa Grande Road (MW 14 – approximately 35 feet northwest of the subject property), less than 50 micrograms per liter ($\mu\text{g/L}$) of TPHg and TPHd, and less than 0.5 $\mu\text{g/L}$ of benzene, toluene, ethylbenzene, and total xylenes (BTEX) was found. Based on the Notice of Pending Action letter from February 19, 2014 on file on the GeoTracker website, this site is going to be closed and received no further action status from the SCEHD. Based on this information, the direction of groundwater flow, and the low levels of contamination found near the subject property, this site is not expected to present a significant environmental concern.

Site Name: Petaluma Poultry Process
Database(s): LUST (twice), NPDES, Hist Cortese, Hist UST, ENF, WDS
Address: 2700 Lakeville Highway
Distance: Approximately 0.15 mile
Direction: Northeast (hydrologically upgradient)

Comments:

AEI reviewed records on file for this site with the SCEHD. Based on these records, there were formerly on 10,000-gallon diesel UST, one 10,000-gallon gasoline UST, and two 550-gallon gasoline USTs on the southern portion of this site. On June 27, 1988, while these tanks were being removed, a leak was discovered. According to the UST Unauthorized Release Report, excavation of contaminated soil was planned. The closure document was not available for review with the SCEHD, however based on information in the regulatory database, the site was granted closure on March 6, 1996 and only soil was impacted at the site.

Based on the relative distance from the subject property, the media affected, and the regulatory status, this site is not expected to present a significant environmental concern.

Site Name: Beacon #3703 (Former)
Database(s): Hist Cortese, LUST (twice)
Address: 2601 Lakeville Highway
Distance: Approximately 0.20 mile
Direction: North (hydrologically upgradient)

Comments:

AEI reviewed records on file for this site on the GeoTracker website. A gas station has operated at this site since the 1970s. In 1987, three 10,000-gallon gasoline USTs and one 12,000-gallon diesel UST were removed from the site. In 2000, piping of the second generation of tanks was removed and some contamination was found. 60 cubic yards of soil was removed. From 2004 to 2008, ozone sparging was conducted on-site, and high vacuum dual phase extraction was also conducted off and on from 1999 to 2010.

In 2012, the second generation of tanks was removed, and soil contamination was found. However, no leaks had ever been documented from these tanks, so the contamination was attributed to the original tanks removed in 1987. All of this additional contamination was excavated. Quarterly groundwater monitoring was conducted from 1999 to 2012. In the most recent groundwater monitoring report from March 14, 2012, the monitoring well closest to the subject property (MW-6 approximately 0.19 mile north of the subject property), was less than 50 µg/L of TPHg and TPHD, and less than 0.5 µg/L of Benzene and MTBE. The site was granted closure on November 15, 2013. Based on the regulatory status of the site, the relative distance from the subject property, and the low levels of contamination found in the monitoring well closest to the subject property, this site is not expected to present a significant environmental concern.

Site Name: Petaluma Precedent
Database(s): CERCLIS
Address: 781 Baywood Drive
Distance: Approximately 0.26 mile
Direction: West (hydrologically cross-gradient)

Comments:

Based on information available in the database, this site is not on the NPL and is a removal only site (no investigation is necessary). The clean-up of the site was completed on July 16, 2011. No mention of the contaminants of concern were available in the database or on the US EPA's website. However, based on the relative distance from the subject property, the direction of groundwater flow, the lack of

additional listings, and the fact that the clean-up has been completed, this site is not expected to present a significant environmental concern.

Site Name: Sola Optical
 Database(s): NPL, CERCLIS, RCRA-SQG, US Eng Control, US INST Control, ROD, HAZNET, PRP
 Address: 3600 Lakeville Highway
 Distance: Approximately 0.56 mile
 Direction: Northeast (hydrologically upgradient)

Comments:
 AEI reviewed record for this site on the US EPA's website. Based on this information, this site has been used to manufacture optical lenses since 1978. In 1982, acetone was identified in an on-site well. In addition, Sola found volatile organic compound (VOC) contamination in soil adjacent to six underground solvent storage tanks. The USTs were removed in 1985 and subsequent investigations found that groundwater was contaminated with trichloroethane (TCA) and methylene chloride. A city well nearby was found to also be contaminated with low levels of TCA. Since 1988, groundwater extraction was conducted on-site.

In 2001, the facility shut down and the property was sold. In 2007, an EPA review was conducted which included the use of institutional controls to protect human health at the site. These include land use restrictions and a ban on wells at the site. In 2013, the EPA determined that all clean-up goals had been met at the site and the site was subsequently removed from the NPL.

Based on this information, the regulatory status of the site and the relative distance from the subject property, this site is not expected to present a significant environmental concern at this time.

5.2 VAPOR ENCROACHMENT

A Tier 1 Vapor Encroachment Screen (VES) pursuant to ASTM E2600-10 was performed as part of this assessment to determine whether a potential *vapor encroachment condition* (VEC) exists at the subject property. The VES included the review of reasonably ascertainable information for the subject and nearby properties. During the course of this assessment, the following sites were identified as a potential source of petroleum hydrocarbons.

Site Name/Address	Distance from Subject Property	Hydrologic Direction Relative to Subject Property	VEC Exists	VEC Likely Exists	VEC Cannot be Ruled Out
Subject Property (Former Royal Tallow and Soap Company)	N/A			X	

Based on the levels of residual contamination which remained at the subject property upon regulatory closure in 2004, including 438 ppm of TPHg, a VEC likely exists at the subject property. AEI recommends additional investigation to determine if a VEC exists at the subject property.

6.0 INTERVIEWS AND USER PROVIDED INFORMATION

6.1 INTERVIEWS

Pursuant to ASTM E1527-13, the following interviews were performed during this investigation in order to obtain information indicating RECs in connection with the subject property.

6.1.1 INTERVIEW WITH OWNER

The representative of the subject property owner, Mr. Derek Pampe of De Nova Homes, was contacted in person on March 3, 2014. Mr. Pampe has been associated with the subject property for one year. Mr. Pampe was asked if he was aware of any of the following:

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Any incidents of flooding, leaks, or other water intrusion, and/or complaints related to indoor air quality.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Mr. Pampe explained to AEI that the subject property is listed as a closed LUST site from a leaking gasoline UST which was removed from the subject property. Mr. Pampe also explained that the subject property was involved in a lawsuit over the clean-up of the site before it was purchased by Baywood from Darling International (owner of the Royal Tallow and Soap Company). Please refer to Sections 4.1.1 and 6.3 for further discussion.				

6.1.2 INTERVIEW WITH KEY SITE MANAGER

The key site manager Mr. Patrick Imbimbo of Baywood, was contacted during on-site reconnaissance on March 17, 2014. Mr. Imbimbo has been associated with the subject property since approximately 2004. Mr. Imbimbo provided general information regarding historic and current operations at the subject property. According to Mr. Imbimbo, the Royal Tallow and Soap Company buildings were demolished completely in 2008. Since that time, the company Soil Land has been using the subject property to store construction debris from off-site. Until about one year ago, Mr. Imbimbo explained that Soil Land was crushing the debris on-site to turn it into Class II Aggregate, which was also being stored on-site before being hauled to off-site projects. Please refer to Section 7.1 for further discussion.

In addition, Mr. Imbimbo explained that fill material has also been brought on-site since 2008. The material has mostly been stockpiled on the northern portion of the property, but is slotted to be dispersed across the entire site as a part of redevelopment. According to Mr. Imbimbo, the fill material was tested and proven to be "clean" before it was brought on-site. However, no record of this was available to AEI during the course of this investigation. Please refer to Section 7.1 for further discussion of the environmental concerns associated with this fill material.

Mr. Imbimbo was asked if he was aware of any of the following:

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Any pending, threatened or past administrative proceedings relevant to	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

hazardous substances or petroleum products in, on, or from the property.				
Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	<input checked="" type="checkbox"/>	Yes		No
Any incidents of flooding, leaks, or other water intrusion, and/or complaints related to indoor air quality.		Yes	<input checked="" type="checkbox"/>	No
Mr. Imbimbo, like Mr. Pampe, explained the legal and environmental history of the subject property to AEI. Please refer above and to Section 4.1.1 and 6.3 for further discussion.				

6.1.3 PAST OWNERS, OPERATORS AND OCCUPANTS

In an attempt to interview past owners, operators and occupants regarding historical on-site operations, AEI requested the contact information for these entities from the key site manager, Mr. Patrick Imbimbo. Mr. Imbimbo provided contact information for the subject property caretaker, Mr. Pete Terribilini. AEI spoke with Mr. Terribilini via telephone on March 18, 2014. Mr. Terribilini currently lives on the subject property one to two days a week in the trailer home on-site.

According Mr. Terribilini, he has worked at the subject property since 1966. He used to live in the residence which was formerly located on the northern portion of the property, and raised his family there. Mr. Terribilini was the plant superintendant for Royal Tallow and Soap Company, where he said he did "a little of everything." AEI asked Mr. Terribilini about the ponds noted in the aerial photographs and historic topographic maps. He stated that the ponds were used to hold water from the plant. Mr. Terribilini explained that the tallow facility was washed down once a day, and the water from this process flowed into a clarifier. According to Mr. Terribilini, this room was called the "sewer room". Water from this cleaning process was filled with "tallow and grease" from the plant operations. The water sat in the clarifier for approximately one day, and then the scum was skimmed off the top and the water was allowed to flow into the waste water ponds. Although the majority of the contaminants in this wastewater was organic in nature, it is possible that petroleum hydrocarbons or solvents used in the rendering process or used on machinery could have been present.

In addition, AEI asked Mr. Terribilini if he was aware of the use of chlorinated solvents on the property. Mr. Terribilini said that the use of these materials would have been by the maintenance staff, and he could not recall what specific materials were used on-site.

Mr. Terribilini also explained to AEI that the entire Royal Tallow and Soap Company facility was on a septic system and not connected to the sewer. A map on file with the SCEHD indicates that two septic tanks were located east adjacent to the main rendering plant, and the septic leach field extended to the southwest. Since the buildings have been demolished, it is unclear whether the septic system was solely used for restroom purposes, or if other water was discharged into the system. In addition, due to the long industrial nature of the property use and the lack of regulatory oversight it is possible that hazardous materials could have entered the septic system. Based on this information, the wastewater discharge from the former facility through the wastewater ponds and the septic system represents a significant environmental concern. AEI recommends further investigation in the area of the septic leach field, former septic tanks, wastewater clarifier, and wastewater disposal ponds to determine if a release to the subsurface has occurred.

6.1.4 INTERVIEW WITH OTHERS

Information obtained during interviews with local government officials is incorporated into the appropriate segments of this section.

6.2 USER PROVIDED INFORMATION

User provided information is intended to help identify the possibility of RECs in connection with the subject property. According to ASTM E1527-13 and EPA's AAI Rule, certain items should be researched by the prospective landowner or grantee, and the results of such inquiries may be provided to the environmental professional. The responsibility for qualifying for Landowner Liability Protections (LLPs) by conducting the inquiries ultimately rests with the User, and providing the information to the environmental professional would be prudent if such information is available.

6.2.1 ENVIRONMENTAL LIENS

AEI was not informed by the User, De Nova Homes, of any environmental cleanup liens encumbering the subject property that are filed or recorded under federal, tribal, state or local law.

6.2.2 ACTIVITY AND LAND USE LIMITATIONS

AEI was not informed by the User of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the subject property and/or have been filed or recorded in a registry under federal, tribal, state or local law.

6.2.3 SPECIALIZED KNOWLEDGE

AEI was not informed by the User of any specialized knowledge or experience related to the subject property or nearby properties.

6.2.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

The User did not indicate to AEI any information to suggest that the valuation of the subject property is significantly less than the valuation for comparable properties due to environmental factors.

6.2.5 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

The User did inform AEI of any commonly known or reasonably ascertainable information about the subject property which aided AEI in identifying conditions indicative of a release or threatened release.

6.2.6 KNOWLEDGE OF PRESENCE OR LIKELY PRESENCE OF CONTAMINATION

The User did inform AEI of any obvious indicators that pointed to the presence or likely presence of contamination at the subject property.

6.3 PREVIOUS REPORTS AND OTHER PROVIDED DOCUMENTATION

Documentation was provided to AEI by De Nova Homes during this assessment. AEI only reviewed pertinent documentation provided. A summary of this information follows:

Royal Tallow and Soap Company Underground Storage Tank Site Characterization Report Petaluma, California, prepared by Environment and Ecology, Inc. (August 17, 1990)

The report states that one or both of the two Royal Tallow USTs leaked before their removal in 1989. One of the USTs was 500-gallon capacity, and the other was 1,000 to 2,000-gallon capacity. As a result of the discovery of the release, 21 soil samples were taken and five monitoring wells were installed on-site. TPH and BTEX were found in the soil samples, and TPH and benzene were found in groundwater. This led to further investigation on the subject property which are discussed below and in Section 4.1.1.

In addition, this report indicated that a soil gas survey was conducted on-site as well. However the results from this survey are not provided, and it does not appear that investigation into potential vapor contamination was conducted on the subject property. Please refer to Section 5.2 for further discussion.

A copy of this report is provided in Appendix F.

Expert Report of Dwight R. Hoening, part of Darling International, Inc. v. Baywood Partners, Inc. (March 2, 2007)

This expert opinion chronicles the history of site remediation, clean-up, investigations, and regulatory actions at the subject property. Based on this summary, in 1986, the Royal Tallow facility ceased operation. In 1989 (case closure documents states that it was in 1990) two USTs were removed from the subject property, and a subsequent investigation (please see above) indicated that both groundwater and soil were contaminated with TPHg.

The report goes on to explain that further reports from 1993 and 1995 explored the possibilities of using bioremediation at the site and using an extraction and treat system to clean contaminated groundwater. However, the report states that none of these remediation systems were actually implemented on the subject property.

The report then goes on to say that no actual remediation besides groundwater monitoring was conducted on-site until 2002 when 2,390 cubic yards of contaminated soil were excavated, treated, and then reused on the subject property. The soil was cleaned-up to not exceed 0.39 mg/kg of TPHg and benzene.

Next, the report highlights that at the time of writing, asbestos and other remaining contained hazardous materials remained on-site. It is AEI's understanding that all of these materials were removed and disposed as part of building demolition in 2008.

Please refer to Sections 4.1.1 and 6.3 for further discussion of the environmental concerns associated with the current status of the subject property. In addition, please refer to section 7.1 for further discussion of the current status of the subject property observed during on-site reconnaissance.

A copy of this report is provided in Appendix F.

Baywood Partners Inc.'s Trial Exhibits – Expert Opinion of Jeffrey Zelikson, part of Darling International, Inc. v. Baywood Partners, Inc. (Case 3:05-cv-03758-EMC, Filed April 5, 2007)

This expert opinion was solicited to determine if Darling International, Inc fulfilled its remediation of the subject property. This states that in 1986, Darling International was required by the Regional Board to perform sampling of the soil beneath the former waste water ponds

(previously discussed in Section 6.1.3). However, from discussion in this document, it appears that Darling International revised their closure plan and the ponds were granted closure by the Regional Board without sampling being performed. Please refer to Section 6.1.3 for further discussion of the environmental concerns associated with the former waste water ponds on the subject property.

This expert opinion also summarizes the two USTs which leaked on the subject property. Please refer to Section 4.1.1 for further discussion of these USTs.

A copy of this report is provided in Appendix F.

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7.0 SITE INSPECTION AND RECONNAISSANCE

On March 17, 2014, a site reconnaissance of the subject property and adjacent properties was conducted by Ms. Elizabeth Scudero of AEI in order to obtain information indicating the likelihood of RECs at the subject property and adjacent properties as specified in ASTM Standard Practice E1527-13 §8.4.2, 8.4.3 and 8.4.4. During the on-site reconnaissance, AEI was accompanied by Mr. Patrick Imbimbo of Baywood. Due to the size of the subject property, AEI performed a site inspection of the property utilizing a field technique of traversing the site in an attempt to provide an overlapping field of view. Due to the size of the property and the vegetation present on site, isolated areas of the site may have not been accessible for direct observation during AEI's inspection. In addition, during on-site reconnaissance, AEI was not granted access into the trailer home located on the northern portion of the property. According to Mr. Patrick Imbimbo of Baywood, the trailer is only used by the subject property caretaker for residential activities. Based on this information, this limitation is not expected to significantly alter the findings of this assessment.

7.1 SUBJECT PROPERTY RECONNAISSANCE FINDINGS

Yes	No	Observation
	X	Hazardous Substances and/or Petroleum Products in Connection with Property Use
	X	Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs / USTs)
	X	Hazardous Substance and Petroleum Product Containers and Unidentified Containers not in Connection with Property Use
X		Unidentified Substance Containers
	X	Electrical or Mechanical Equipment Likely to Contain Fluids
	X	Interior Stains or Corrosion
	X	Strong, Pungent or Noxious Odors
	X	Pools of Liquid
	X	Drains, Sumps and Clarifiers
X		Pits, Ponds and Lagoons
	X	Stained Soil or Pavement
	X	Stressed Vegetation
X		Solid Waste Disposal or Evidence of Fill Materials
	X	Waste Water Discharges
X		Wells
	X	Septic Systems
X		Other

The subject property is currently occupied part time by a caretaker living in a trailer home parked on-site.

The above identified observed items are further discussed below.

UNIDENTIFIED SUBSTANCE CONTAINERS

One approximately 100-gallon container was observed on the southern portion of the subject property. The container appeared to be empty and no odor was identified around the

container, however brown sludge could be seen collected at the bottom of the container. According to Mr. Imbimbo, the container was left behind by a sheep herder, but he was not aware of its contents. Based on the fact that the container appeared to be empty and no staining was identified, the presence of the container is not expected to present a significant environmental concern. However, as a best management practice, the container should be removed from the subject property and properly disposed of off-site.

PITS, PONDS AND LAGOONS

Various low-grade areas were identified on the subject property with standing water. According to Mr. Imbimbo, these areas are seasonally inundated with water from the drainage creek adjacent to the east of the subject property. Based on the nature of these areas for storm water collection, they are not expected to present a significant environmental concern.

In addition, Mr. Imbimbo explained that the western portion of the subject property is part of the National Wetland Inventory. This was confirmed in the regulatory database vicinity map, which shows that the southern portion of the property is also considered to be a wetland. No hazardous materials or petroleum products were observed the standing water or these wetland areas. Therefore, these areas are not expected to represent a significant environmental concern. However, AEI understands that the subject property is slated for redevelopment. AEI recommends contacting the local planning and/or building departments to determine whether a Wetlands Delineation report is required and if mitigation is required in order to develop in these areas.

SOLID WASTE DISPOSAL OR EVIDENCE OF FILL MATERIALS

According to Mr. Imbimbo, fill material from off site has been stockpiled on the northern portion of the subject property. The stockpiled material appeared to be approximately ten to 12 feet high. Mr. Imbimbo explained that the soil was deemed as "clean" before it was deposited on the subject property, and there are plans to use the material as fill before redevelopment of the property. However, no information was provided to AEI as to the origin of the material and no soil testing data was available to verify that there are no contaminants in the material. There is the potential that contamination from off-site may be present in this material. AEI recommends sampling of the fill material prior to use on the subject property to determine if contamination from off-site sources is present.

WELLS

One small groundwater monitoring well was observed on the western portion of the subject property. According to Mr. Imbimbo, the well was installed by Baywood approximately one year ago to monitor the groundwater levels on the subject property. Mr. Imbimbo indicated that there were possibly other similar wells on the subject property, but no others were identified by AEI during on-site reconnaissance. No hazardous materials or petroleum products were observed in the area of the well. Based on this information, the presence of the well is not expected to present a significant environmental concern. However, AEI recommends the proper decommissioning of the well prior to redevelopment activities.

OTHER

A large mound (approximately 20 feet high) of construction debris is located on the central portion of the subject property. According to Mr. Imbimbo, this debris has been stored on the subject property by the Soil Land Company from various off-site construction sites. According to Mr. Imbimbo, until approximately one year ago, Soil Land was crushing the material on site

and turning it into Class II Aggregate to be reused off-site. Just south of this mound, there is another smaller mound of this Class II Aggregate left over from the crushing operations (composed of cement and concrete). There is a potential that asbestos and/or other potentially hazardous or regulated materials are present in this material. AEI recommends sampling of this material and proper off-site disposal.

7.2 NON-ASTM SERVICES

7.2.1 ASBESTOS-CONTAINING BUILDING MATERIALS

The subject property is currently vacant land and lacks permanent structures. However, please refer above for discussion of construction debris on the subject property.

7.2.2 LEAD-BASED PAINT

The subject property is currently vacant land and lacks permanent structures. Consequently, no building components containing suspect lead-based paint were identified during the site inspection.

7.2.3 RADON

Radon is a naturally-occurring, odorless, invisible gas. Natural radon levels vary and are closely related to geologic formations. Radon may enter buildings through basement sumps or other openings.

Radon sampling was not requested as part of this investigation. According to the California Department of Health Services Radon Database, 23 tests were conducted for radon levels in the subject property zip code (94954) in 2010. All of these tests indicated that radon levels were below the action level of 4.0 pCi/L set forth by the US EPA. Therefore, radon is not expected to represent a significant environmental concern.

7.2.4 DRINKING WATER SOURCES AND LEAD IN DRINKING WATER

The City of Petaluma supplies potable water to the subject property. The most recent water quality report states that lead levels in the areas water supply were 1.6 and therefore are well within standards established by the US EPA.

7.2.5 MOLD/INDOOR AIR QUALITY ISSUES

The subject property is currently vacant land and lacks permanent structures. Consequently, mold was not addressed as part of this assessment.

7.3 ADJACENT PROPERTY RECONNAISSANCE FINDINGS

Yes	No	Observation
X		Hazardous Substances and/or Petroleum Products in Connection with Property Use
	X	Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs / USTs)
	X	Hazardous Substance and Petroleum Product Containers and Unidentified Containers not in Connection with Property Use
	X	Unidentified Substance Containers
	X	Electrical or Mechanical Equipment Likely to Contain Fluids
	X	Strong, Pungent or Noxious Odors
	X	Pools of Liquid
	X	Drains, Sumps and Clarifiers
X		Pits, Ponds and Lagoons
	X	Stained Soil or Pavement
	X	Stressed Vegetation
X		Solid Waste Disposal or Evidence of Fill Materials
	X	Waste Water Discharges
	X	Wells
	X	Septic Systems
	X	Other

The above identified observed items are further discussed below.

HAZARDOUS SUBSTANCES AND/OR PETROLEUM PRODUCTS IN CONNECTION WITH PROPERTY USE

The adjacent site to the northwest, Skoff Trucking, conducts auto repair on site. Based on the nature of use, AEI presumes that various quantities of hazardous materials are stored onsite. This site was previously discussed in Section 5.1 of this report.

PITS, PONDS AND LAGOONS

A pond is located adjacent to the south of the subject property. According to Mr. Imbimbo, the pond was created when the City of Petaluma built the walking trail south of the subject property, which dammed the area. Based on the nature of the pond it is not expected to represent a significant environmental concern.

A drainage stream runs along the western boundary of the subject property. According to Mr. Imbimbo, the water in the stream flows underground from Highway 120, surfaces just west of the subject property, and then flows to the Petaluma River. Based on the nature of the stream for storm water runoff, it is not expected to represent a significant environmental concern.

SOLID WASTE DISPOSAL OR EVIDENCE OF FILL MATERIALS

The adjacent site to the west was formerly the Casa Grande Landfill operated by the City of Petaluma. During off-site reconnaissance, AEI observed signs indicating that glass and debris is still present on the adjacent site and in the creek discussed above. This site was previously discussed in Section 5.1 of this report.

8.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

By signing this report, the senior author declares that, to the best of his or her professional knowledge and belief, he or she meets the definition of *Environmental Professional* as defined in §312.10 of 40 CFR Part 312.

The senior author has the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. The senior author has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40CFR Part 312.

Prepared By:

DRAFT

Elizabeth Scudero
Project manager

Reviewed By:

DRAFT

Steve Kovach
Senior Author

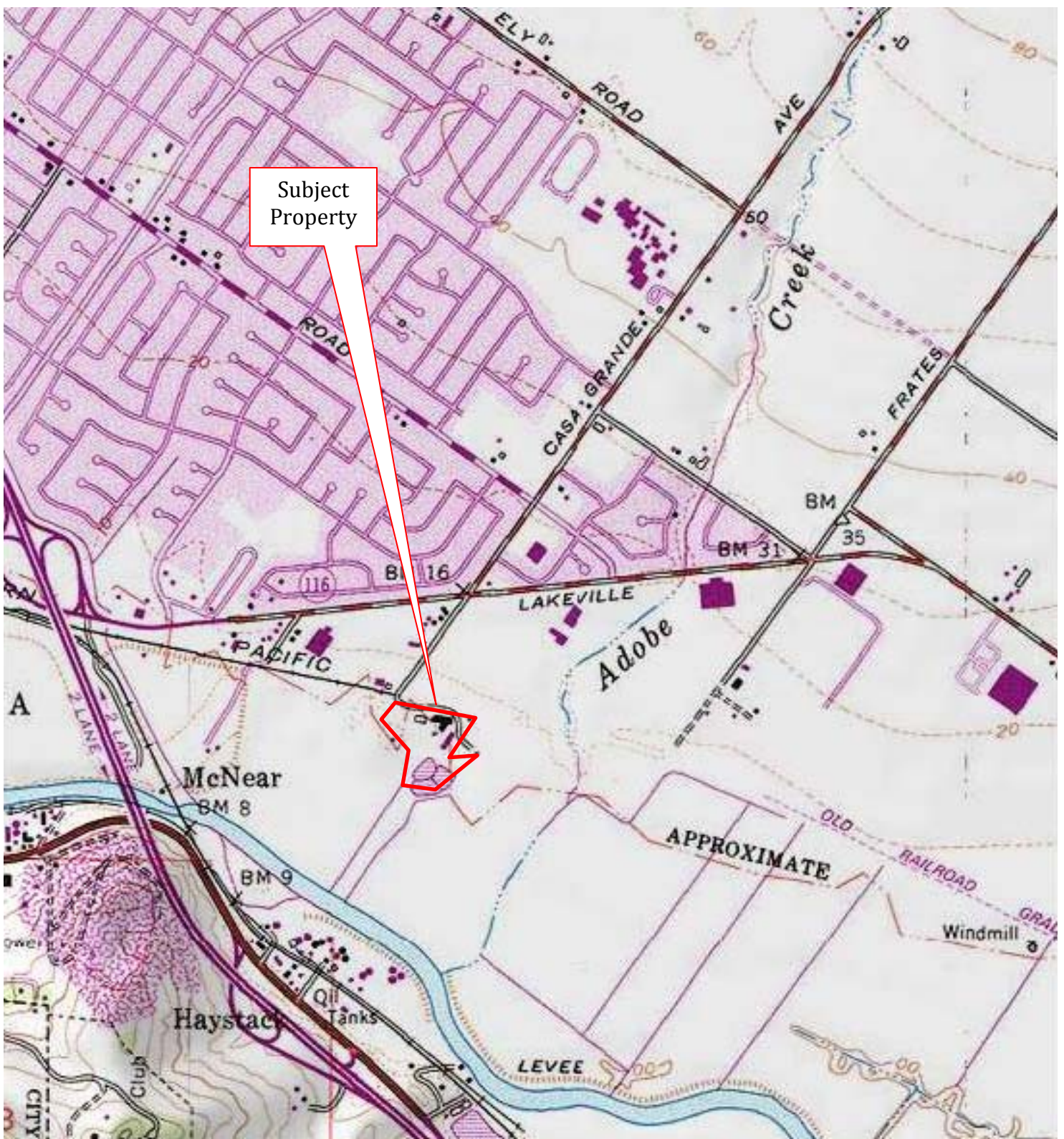
9.0 REFERENCES

Item	Date(s)	Source
Topographic Map, Petaluma River, California Quadrangle	1980	United States Geological Survey (USGS)
Soils Information	1993	United States Department of Agriculture (USDA) Web Soil Survey
Depth of Groundwater Information	August 17, 1990	Royal Tallow and Soap Company UST Site Characterization report prepared by Ecology and Environment
Historical Aerial Photographs	1953, 1965, 1982, 1993, 1998, 2012	USGS, Cartwright Aerial Surveys, Fairchild Aerial Surveys, Agricultural Stabilization and Conservation Service (ASCS)/ USDA, Pacific Aerial Surveys
Sanborn Maps	February 24, 2014	Seattle Public Library's Online Collection
City Directories	1972, 1976, 1981, 1986, 1991, 1996, 2001, and 2006	AEI's Private Collection of Haines and Co. Criss-Cross Directories
Historical Topographic Maps	1914, 1924, 1940, 1955, 1962, 1969, 1975, 1980	HistoricAerials.com
Health Department	March 10, 2014	Sonoma County Environmental Health Division
Fire Department	March 10, 2014	Petaluma Fire Department
Building Department	February 24, 2014	Petaluma Building Department
Planning Department	March 13, 2014	Petaluma Planning Department
Assessor's Information and Parcel Map	February 24, 2014	Sonoma County Assessor's Office
Oil and Gas Wells	February 24, 2014	Department of Oil, Gas and Geothermal Resources (DOGGR Website)
Other Agencies	February 24 and March 11, 2014	State Water Resources Control Board (SWRCB), Department of Toxic Substances Control (DTSC), Bay Area Air Quality Management District (BAAQMD), United States Environmental Protection Agency (US EPA), Sonoma County Office of the Agricultural Commissioner, City of Petaluma Parks and recreation Department
Regulatory Database	February 25, 2014	Environmental Data Resources, Inc. (EDR)
Interviews	March 3, 17, and 18, 2014	Mr. Derek Pampe of de Nova Homes, Mr. Patrick Imbimbo of Baywood, and Mr. Pete Terribilini, former Royal Tallow and Soap Company Plant Superintendent
Previous Reports	August 17, 1990, March 2, 2007, and April 5, 2007	<i>Royal Tallow and Soap Company Underground Storage Tank Site Characterization Report Petaluma, California</i> , prepared by Environment and Ecology, Inc. (August 17, 1990); <i>Expert Report of Dwight R. Hoening</i> , part of <i>Darling International, Inc. v. Baywood Partners, Inc.</i> (March 2, 2007); <i>Baywood Partners Inc.'s Trial Exhibits – Expert Opinion of Jeffrey Zelikson</i> , part of <i>Darling International, Inc. v. Baywood</i>

		<u>Partners, Inc. (Case 3:05-cu-03758-EMC, Filed April 5, 2007)</u>
Radon Zone Information	2010	California Department of Health Services Radon Database for California
Drinking Water Quality Report	2012	City of Petaluma Website

DRAFT

FIGURES



SITE LOCATION MAP

2592 Lakeville Highway, Petaluma, California, 94954



Approximate Property Boundary ▬

Source: USGS Topographic Map, *Petaluma River California* (1980)

FIGURE 1

Project Number: 327703

AEI
Consultants



SITE MAP

2592 Lakeville Highway, Petaluma, California 94954



FIGURE 2
Project Number: 327703





HISTORICAL SITE MAP

2592 Lakeville Highway, Petaluma, California 94954



Legend *All Locations Are Approximate

Approximate Property Boundary — Former Monitoring Wells ⊕ Former Septic Tank

Former UST ⋯ Former Waste Ponds * Former Sump ■

Former Buildings □ Former Railroad Spur - - - Project Number: 327703

FIGURE 3

AEI
Consultants

APPENDIX A
PROPERTY PHOTOGRAPHS



1. View of the entrance to the subject property from Casa Grande Road, facing southeast.



2. View of the subject property from the adjacent site to the west, facing northeast.



3. View of the gravel road leading to the construction debris mound on the central portion of the subject property, facing southeast.



4. Detail of construction debris mound on the central portion of the subject property.



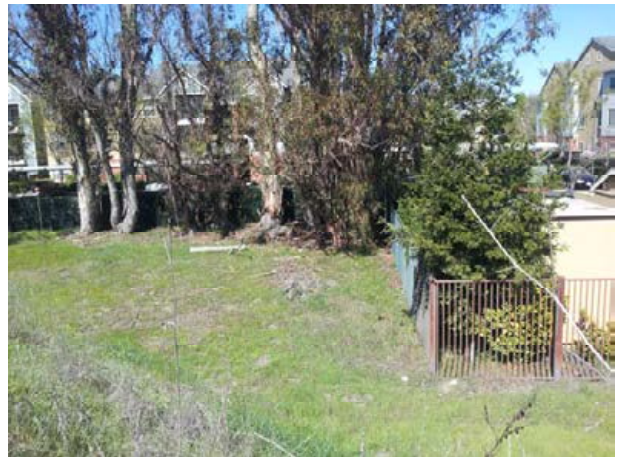
5. View of dumpster on the central portion of the subject property near the construction debris mound.



6. View of the subject property, facing east with the fill material stockpile on the left and the debris mound on the right.



7. Additional view of debris pile and the central portion of the subject property, facing southwest.



8. View from the top of the fill material stockpile looking down on the former location of the railroad spur and railroad right of way on the northern portion of the subject property, facing north.



9. View of the northeastern portion of the subject property (and adjacent sites to the north and east), facing east.



10. View of the southeastern portion of the subject property, facing southeast.



11. View of the central portion of the subject property, facing northeast.



12. View of the southwestern portion of the subject property, facing west.



13. View of unidentified substance container on the southern portion of the subject property.



14. View of the base of the unidentified substance container.



15. View of the western side of the subject property, facing north.



16. View of monitoring well on the western portion of the subject property.



17. View of the monitoring well and the central portion of the subject property, facing east.



18. View of the draining creek from the western side of the subject property.



19. View of the southern portion of the subject property from the top of the construction debris pile.



20. View of the southeastern portion of the subject property from the top of the construction debris pile.



21. View of the northeastern corner of the subject property from the top of the construction debris pile.



22. View of the entrance to the subject property from the central portion of the subject property, facing northwest.



23. View of trailer home on the northwestern corner of the subject property.



24. View of draining area adjacent to the west of the subject property.



25. View of the adjacent site to the east from the subject property, facing east.



26. View of the entrances to the adjacent sites to the west on Casa Grande Road.



27. View of the adjacent site to the north west from Casa Grande Road.



28. View of warning sign along the creek adjacent to the subject property.

APPENDIX C
HISTORICAL SOURCES



AERIAL PHOTOGRAPH

2592 Lakeville Highway, Petaluma, California



Approximate Property Boundary 

Year: 1953

Project Number: 327703

AEI
Consultants



AERIAL PHOTOGRAPH

2592 Lakeville Highway, Petaluma, California



Approximate Property Boundary 

Year: 1965

Project Number: 327703

AEI
Consultants



AERIAL PHOTOGRAPH

2592 Lakeville Highway, Petaluma, California



Approximate Property Boundary 

Year: 1982

Project Number: 327703

AEI
Consultants



AERIAL PHOTOGRAPH

2592 Lakeville Highway, Petaluma, California



Approximate Property Boundary 

Year: 1993

Project Number: 327703

AEI
Consultants



AERIAL PHOTOGRAPH

2592 Lakeville Highway, Petaluma, California



Approximate Property Boundary 

Year: 1998

Project Number: 327703

AEI
Consultants



AERIAL PHOTOGRAPH

2592 Lakeville Highway, Petaluma, California



Approximate Property Boundary 

Year: 2012

Project Number: 327703

AEI
Consultants

APPENDIX D

REGULATORY AGENCY RECORDS

COUNTY ASSESSOR'S PARCEL MAP

TAX RATE AREA 5-06
3-011
3-061

PARCEL MAP NO. 92

REC. 03-25-76 IN BK. 232, MAPS, PGS. 27

PARCEL MAP NO. 271

REC. 10-28-92 IN BK. 501, MAPS, PGS. 12-14

PARCEL MAP NO. 386

REC. 03-23-11 IN BK. 744, MAPS, PGS. 44-46

PARCEL MAP NO. 81

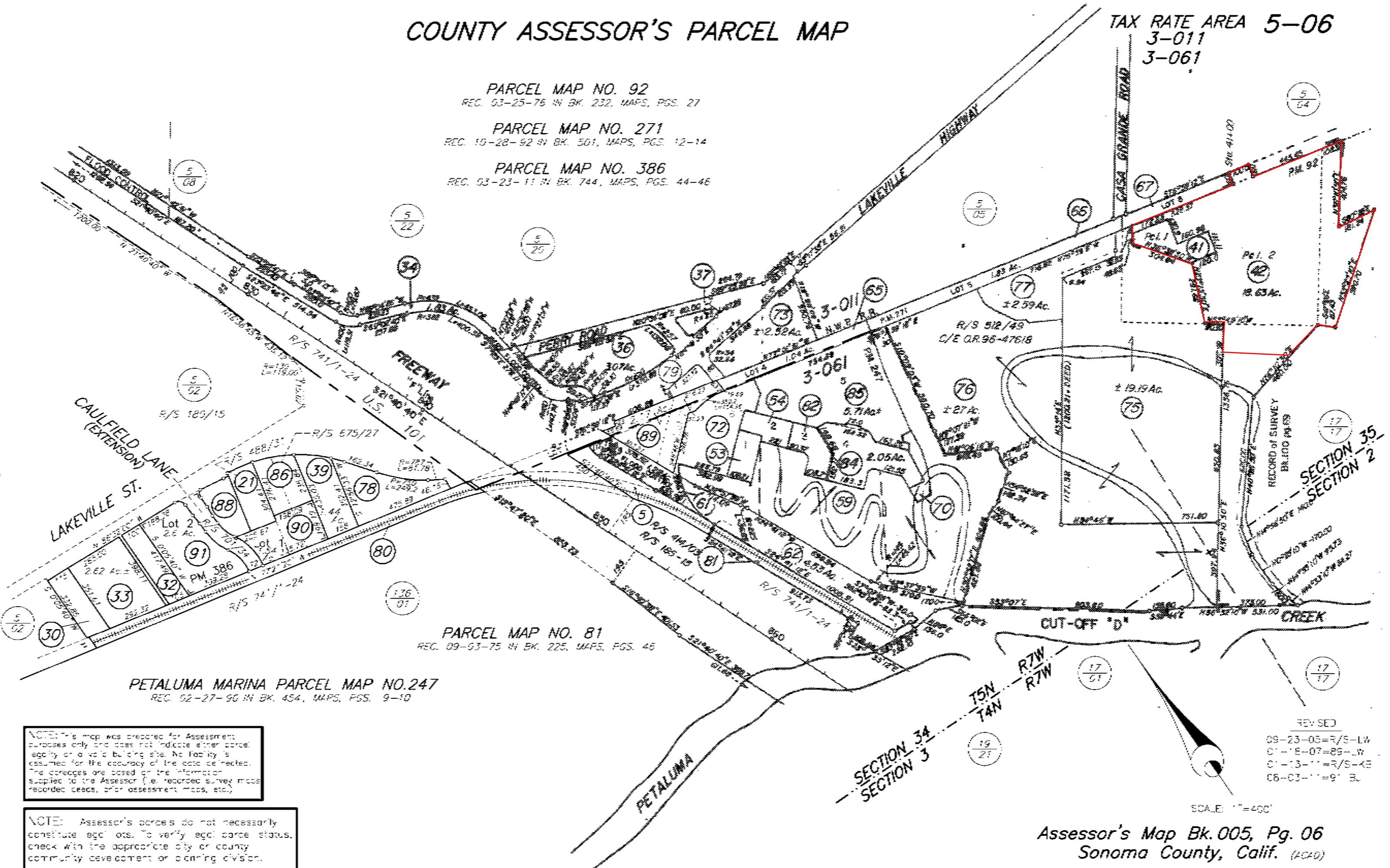
REC. 09-03-75 IN BK. 225, MAPS, PGS. 46

PETALUMA MARINA PARCEL MAP NO. 247

REC. 02-27-90 IN BK. 454, MAPS, PGS. 9-10

NOTE: This map was prepared for Assessment purposes only and does not indicate either parcel equality or a void building site. No liability is assumed for the accuracy of the data collected. The corridors are based on the information supplied to the Assessor (i.e. recorded survey maps, recorded deeds, prior assessment maps, etc.)

NOTE: Assessor's parcels do not necessarily constitute legal lots. To verify legal parcel status, check with the appropriate city or county community development or planning division.



REVISED
09-23-05=R/S-LW
01-18-07=89-LW
01-13-11=R/S-LE
06-03-11=91-BL

SCALE: 1"=400'

Assessor's Map Bk. 005, Pg. 06
Sonoma County, Calif. (ACAD)

HYBRID 1/18/07 LW



SONOMA COUNTY
PUBLIC HEALTH DEPARTMENT

3313 CHANATE ROAD
SANTA ROSA, CALIFORNIA 95404
PHONE: 527-2605

1-9-86

To: Royal Tallow & Soap Co.
P.O. Box 738
Petaluma, CA 94953

Re: Application for Permit to Operate
underground storage tank(s) at
2592 Lakeville Hwy.

Your application has been received. A preliminary review indicates the application is incomplete, and the following item(s) are needed in order to continue the review process:

1. An accurate and complete plot plan (see reverse side).
2. A written response plan (see reverse side).
3. Specific information on the leak detection and monitoring system used for the tank(s), in accordance with State regulation (see attachment).
4. A written, routine monitoring procedure (see reverse side).
5. A completed form #UT3 for each tank (enclosed), numbered in accordance with location shown on the plot plan.
6. Correct fee should be in the amount of _____.
Check or money order payable to "Sonoma County Public Health."
7. Other:
Complete and return enclosed form UT #2

If you need a complete copy of the State regulations on underground storage tanks, contact Betty Moreno, State Water Resources Control Board, (916) 324-1262.

Further information can be obtained by calling J. Lee or M. Sullivan
at (707) 527-2711, Tues. through Fri.,
between 7:00 a.m. and 9:00 a.m.

DLE/11

0277X



SONOMA COUNTY
PUBLIC HEALTH DEPARTMENT

3313 CHANATE ROAD
SANTA ROSA, CALIFORNIA 95404
PHONE: 527-2605



February 1, 1987

Gray, Jake
P.O. Box 738
Petaluma, CA 94953

Re: Annual Reporting Form for Underground Storage Tanks at
2592 Lakeville, Petaluma, CA

Dear Tank Owner:

Enclosed is an Annual Reporting Form that is required to be completed and submitted for your underground storage tanks on an annual basis pursuant to Section 29-29(a) of the Sonoma County Code. After answering the sections on the form, submit with payment of your annual permit to operate fee in accordance with the enclosed invoice.

If you have any questions, please call me at (707) 527-2784, Monday through Thursday, between 7 a.m. and 5:30 p.m.

Very truly yours,

Jeff Lewin
JEFF LEWIN, R.S.
Supervising Sanitarian

JL/11

Enclosures: Annual Reporting Form
Annual Operating Permit Invoice

Annual Permit/Operator



SONOMA COUNTY
HAZARDOUS MATERIALS MANAGEMENT
PROGRAM

2435 Professional Drive, Suite A
Santa Rosa, CA 95403 • (707) 527-1164

February 1, 1989

Royal Tallow & Soap
2592 Lakeville
Petaluma, CA 94952

Re: Annual Reporting Form for Underground Storage Tanks at
2592 Lakeville, Petaluma

Dear Tank Owner:

Enclosed is an Annual Reporting Form that is required to be completed and submitted for your underground storage tanks on an annual basis pursuant to Section 29-29(a) of the Sonoma County Code. After answering the sections on the form, submit with payment of your annual permit to operate fee in accordance with the enclosed invoice.

If you have any questions, please call me at (707) 527-2784, Monday through Friday, between 8 a.m. and 5:00 p.m.

Very truly yours,

A handwritten signature in cursive script that reads "Jeff Lewin".

JEFF LEWIN, R.E.H.S.
Supervising Hazardous Materials Specialist

JL/11

Enclosures: Annual Reporting Form
Annual Operating Permit Invoice
Quarterly Reconciliation Forms

Annual Permit/00001359

UNDERGROUND STORAGE TANK
FIELD INSPECTION REPORT

Prop 65
505 6/30/89
3:40 pm
M.J. Sanitarian
Public Health
Logbook

ID# _____

DATE 6-30-89

TIME _____

FACILITY NAME Royal Tallow

FACILITY ADDRESS 2592 Lakeville Rd., Petaluma

FIELD ACTIVITY

- Routine
- Follow-Up
- Complaint
- Const./Equip. Inspection
- Survey/Field Study
- Emergency/Incident Investigation
- Consultation
- Sample/Test/Monitor
- Site Investigation/Clean-Up
- Other _____

UNDERGROUND TANK CONSTRUCTION/MODIFICATION

- Existing Tank Repair/Reline
- Monitoring Well Construction/Abandonment
- Abandonment/Closure: All Tanks Specific Tank(s) _____
- Tank Integrity Test
- Piping Repair
- Inventory Control
- New Tank Construction

PERMIT ISSUE Yes No

- 1-Year Annual Monitoring
- 2-Year Temporary Closure
- 3-Year Interim Monitoring
- 5-Year Annual Operating
- Permanent Closure

COMMENTS:

Licensed
Hauler
#003206

(Scott)
Pace - Petroleum Engineering - Pet. FD (Yannie)
Dillard Trucking, Inc., Byron, Ca. - Hauling U.T.'s.
Obvious holes in both tanks. 2000gal U.T. had one hole -
1000gal U.T. had multiple holes. Water present in
2000gal pit & floating product, tar wrap loose and
easy to remove, backfill contaminated. 1000 gal U.T.
not used for 30+ years. 2000gal U.T. has been used
until last year (1988). Backfill obviously contaminated (gray color)
3 domestic wells on east end of property. None being
used at this time (salt intrusion). Shallow depths (~30')
Yannie (Pet. F.D.) -> verified LEL < 10% + water supply from public system
Lab analysis: TPH (6), BTXB, Pb.

Both pits

0788X

Rev. 05/86

2 samples from both pits
nature soil

M.J.S.

Sanitarian

Water first observed appears to be from
excavation only. No water seen at depth of sample.

Lithology: silty clay
Pictures taken

COUNTY OF SONOMA
PUBLIC HEALTH DEPARTMENT
HAZARDOUS MATERIALS SECTION
2435 PROFESSIONAL DR., SUITE A
SANTA ROSA, CA 95403
(707) 527-1164

APPLICATION FOR PERMIT TO:

ID# 1359

- PRESSURE LOSS DETECTOR TEST
- TANK PIPING INTEGRITY TEST
- RENEWAL/EXTENSION
- REPAIR/MODIFY (includes leak detection & product lines)
- CLOSURE - Specify which tanks: (1) 500 GALLON GASOLINE AND (1) 2,000 GALLON GAS.
- CLEARANCE
- NEW/REPLACEMENT

For Office Use Only
 Date Paid: 3/30/89
 Receipt #: 1368131
 Amount: \$252.00
 Revenue Code: 1363 SW

UNDERGROUND STORAGE TANK

Application is hereby made to the Sonoma County Health Officer for a permit to construct, repair, alter an underground storage tank, or perform a tank/piping integrity test in compliance with the Code of Sonoma County or for clearance for other construction/testing. This permit application must be signed on all three signature lines by the same person (i.e., contractor or owner/builder). A letter of authorization from owner must accompany this application if agent is signing on owner's behalf.

FACILITY NAME: ROYAL TALLOW & SOAP Co PHONE: (707) 762-2732
 ADDRESS: 2592 LAKEVILLE HIGHWAY CITY/ZIP: PETALUMA, CALIFORNIA 94952
 ASSESSOR'S PARCEL #: 17-01-7 CROSS STREET: CASAGRANDE ROAD FIRE DIST: PETALUMA
 OWNER'S NAME: ROYAL TALLOW & SOAP Co. PHONE: (415) 647-4890
 ADDRESS: P.O. Box 880006 CITY/STATE/ZIP: SAN FRANCISCO, CALIFORNIA 94188
 OPERATOR'S NAME: MR. ED JENKINS, GENERAL MANAGER PHONE: (415) 647-4890
 ADDRESS: 429 AMADOR STREET CITY/STATE/ZIP: SAN FRANCISCO, CALIFORNIA 94124
 CONTRACTOR'S NAME: PETROLEUM ENGINEERING, INC. PHONE: (707) 545-0360
 ADDRESS: 11 W. NINTH STREET CITY/STATE/ZIP: SANTA ROSA, CALIFORNIA 95401

TERMS OF PERMIT

APPLICANT AGREES THAT:

- 1) Health Dept. Sanitarian will be notified a minimum of 48 hours prior to commencing work.
- 2) Health Dept. Sanitarian inspection will be obtained prior to covering the work (where applicable).
- 3) Any deviation from approved plan/permit without prior approval of the Health Officer will be cause for stopping work until the changes are fully justified and approved.
- 4) This permit is subject to revocation if found to be in nonconformance with Sonoma County Code or standards of the Public Health Dept.
- 5) I, the undersigned owner/operator/applicant of the subject facility hereby authorize Ronald C. Marchant to release any and all analytical results, geotechnical data and site assessment information to the Sonoma County Public Health Dept. as soon as it is available and is provided to me or my representative.
- 6) Additional items: _____

It is understood that the issuance of a permit in no way indicates that a guarantee of perfect and indefinite operation is made by the County of Sonoma Public Health Dept. I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all County ordinances and State laws regulating underground storage tanks and storage tank integrity testing. This permit shall expire by limitation if work authorized is not commenced within 365 days.

Ronald C. Marchant
 SIGNATURE OF APPLICANT
 PETROLEUM ENGINEERING, INC.

The undersigned applicant certifies the following:

- CONTRACTORS LICENSE LAW CERTIFICATE (Complete either A or B)
- A. The applicant is licensed under the provisions of the Contractors License Law under License Number 224358 which License is in full force and effect.
 - B. The applicant is exempt from the provisions of the Contractors License Law for the following reasons:
 - 1) Owner/Builder
 - 2) Other (explain)

- WORKMEN'S COMPENSATION CERTIFICATE (Complete either A or B)
- A. A currently effective certificate of Workmen's Compensation Insurance coverage is on file with the Sonoma County Public Health Dept. Compensation Insurance Policy # PC-988913 is currently in force.
 - B. I certify that in the performance of the work for which this permit is issued I shall not employ any person in any manner so as to become subject to the workmen's compensation laws of California.

X Ronald C. Marchant 3-30-89 X Ronald C. Marchant 3-30-89
 APPLICANT DATE APPLICANT DATE

PLAN APPROVED BY: [Signature] DATE: 6-30-89 CONSTRUCTION APPROVED BY: _____ DATE: _____

SITE SAFETY PLAN

I INTRODUCTION

This Health and Safety Plan has been prepared to outline the minimum standards to be applied to the site. This Health and Safety Plan will be followed by PETROLEUM ENGINEERING, INC. and their SUBCONTRACTORS during their involvement in this project.

The jobsite name and address is: ROYAL TALLOW & SOAP Co.
2592 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA 94952

The site contains: ONE (1) 500 GALLON AND ONE (1) 2,000 GALLON
UNDERGROUND GASOLINE TANKS

This Health and Safety Plan outlines a personnel and work site safety program to minimize the risk of endangering surrounding personnel and/or property.

II HEALTH AND SAFETY CONSIDERATIONS

A. Key Personnel

Health and Safety Officer

The designated Health and Safety Officer for this project is: JOB FOREMAN TO BE NAMED. This person will be responsible for planning, implementing and auditing the health and safety program for this project.

B. Hazardous Substance Description

No known contamination exists at this site. However, observation of the excavated material should be made to detect any unusual odors or obvious indication that contamination may be present.

RECEIVED
MAR 30 1987
HAZARDOUS MATERIALS

