METALS EXCAVATION WORKPLAN

Former Roger's Garage
1622 Old Arcata Road
Arcata, California

CASE NO. 1NHU804

Prepared for:
KD Investments
5251 Ericson Way
Arcata, California 95502

Gwen Erickson, Staff Geologist

Christine Manhart, PG 7576, Exp. 12/31/05

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No. 7576
Exp. 03/31/
STATE OF CALIFORNIA

LACO ASSOCIATES
CONSULTING ENGINEERS
21 W. 4th St. · PO 1023 · Eureka, CA 95502 · 707.443.5054

May 25, 2005
Project No. 5189.04

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METALS EXCAVATION WORKPLAN
KD Investments/Former Roger's Garage
1622 Old Arcata Road, Arcata, California
CRWQCB No. 1NHU804; LACO Project No. 5189.04

INTRODUCTION

The referenced site is located in a residential area of Arcata, California, and is currently leased as a commercial business (Figure 1). The site historically has been used as a full service garage with fueling and maintenance operations; vehicle salvaging and crushing; auto body painting; and the storage of materials associated with these operations. Proposed development for the site includes Montessori and EduCare Preschools. Based on the proposed development, an investigation to evaluate soils impacted by metals was completed in February 2005 in the salvage yard area of the site. This investigation identified the following:

- Elevated copper, lead, zinc, and cadmium concentrations above preliminary remediation goals exist within the upper foot of soils.
- Elevated metals concentrations typically do not extend below a depth of 1.5 feet.

LACO ASSOCIATES (LACO) presents this workplan proposing the excavation of lead-impacted soil exceeding the average natural background lead concentration of 31 ppm per our previous recommendation (LACO, 2005). The background lead concentration was determined by the average of eight soil samples collected within a 500-foot radius of the site. Background metals sampling locations are presented on Figure 2. All background lead concentrations are presented on Table 1. A copy of the laboratory report for samples JCS-NW, JCS-SW, HYLAND, and PG&E is included as Attachment 1. Previous results were presented in LACO's *Metals Investigation Status Report*, dated April 22, 2005 (LACO, 2005).

The intent of this workplan is to protect the health and safety of site workers and future site occupants by removing soil with a potential risk to human health or the environment, prior to the development of the site.

SCOPE OF WORK

1. Perform an excavation of metals-impacted soil within the areas defined on Figure 2. As elevated concentrations of other metals of concern are associated with elevated lead concentrations, we will refer only to lead in this workplan. The excavations will

specifically remove lead contamination in soil greater than the average background concentration of 31 ppm to an approximate depth of 1 to 1.5 feet.

2. The estimated lateral extents of contamination are based on the February 2005 investigation and may be extended if field observations warrant such action. We estimate approximately 150 to 200 cubic yards of impacted soil will be excavated from the site.
3. Contaminated soil from the excavation will be loaded directly into roll-off bins and stored on-site pending waste characterization for disposal.
4. A community health and safety plan will be prepared for the excavation activities outlined in this workplan.
5. The locations of any subsurface drainage observed during the excavation will be surveyed.

General Methodology

Figure 3 presents proposed excavation areas divided into three zones based on lead concentrations reported during the February 2005 metals investigation. These zones are indicative of predicted waste classifications (hazardous or non-hazardous).

The excavation will occur in two phases based on soil lead waste classifications. The first phase will be performed using a backhoe supplied and operated by a licensed environmental contractor. This phase will include the excavation and segregation of lead-impacted soil likely considered RCRA and California Hazardous waste.

The second phase will be achieved with a backhoe, supplied and operated by the responsible party (a licensed general contractor), and includes the excavation of all remaining soil impacted with lead exceeding background concentrations, but likely of a non-hazardous nature.

All contaminated soil will be hauled and disposed of off-site; it shall be done with prior California Regional Water Quality Control Board (CRWQCB) and Humboldt County Division of Environmental Health (HCDEH) notification and approval, and to qualified waste sites by licensed haulers. Copies of manifests and weigh tickets will be provided to the CRWQCB and the HCDEH.

The final excavation depth and extent will be determined in the field by a portable NITON x-ray fluorescence (XRF) analyzer capable of a detection limit for lead of 15 μg/g. One bulk soil sample will be collected for every 20 linear feet of sidewall and one bulk soil sample will be

collected for every 400 square feet of cavity bottom for XRF characterization. Bulk soil samples will be collected by hand from the sidewalls and floors, and placed directly into a thin plastic bag for field analysis.

Based on the observations of perched aquifer seeps in the area of borings X6 to Z3, groundwater may be encountered during the over-excavations. All groundwater will be pumped and containerized in 55-gallon DOT-approved drums, labeled, and stored onsite pending disposal.

Access to the site is generally limited as the salvage yard area is completely fenced from the general public. However, security fencing will additionally be placed across the front entrance from Old Arcata Road to ensure public health and safety.

Airborne particulate lead will be controlled by suppressing dust emissions during soil removal activities. The proposed excavation area will be wetted prior to and intermittently during excavation activities. Soils will be excavated and placed directly into covered roll-off bins provided by the licensed contractor, and will not be exposed to wind or rain. Bins will be stored on-site, covered, and locked pending soil characterization. Bins will then be off-hauled and disposed of at appropriately permitted landfills. Perimeter monitoring during the excavation of the expected hazardous-level material will be conducted by the contractor.

Additionally, to limit particulate lead exposure off-site, all vehicles driving into the salvage yard area will be required to decontaminate their wheels and tires prior to leaving the site. This precaution will ensure that soil with elevated lead concentrations is not mobilized off the site.

All procedures involved in the implementation of this workplan are as outlined in the LACO's Standard Operating Procedure No. 1 included in Attachment 2. All aspects of safety are as outlined in the Health and Safety Plan submitted to your office under separate cover. A community health and safety plan will be prepared for the excavation activities outlined in this workplan. Underground services alert and the client will be notified a minimum of 48 hours in advance of the over-excavation. The CRWQCB and the HCDEH will be notified 5 days in advance.

Reporting

Following implementation of the workplan and receipt of all laboratory reports, LACO will submit a report of findings to the CRWQCB. The report will include a description of the work

performed, field methods and observations, laboratory results, conclusions, and recommendations. The data from the investigation will be used to develop a soil contingency plan for the site.

LACO will proceed with implementation of the workplan within 30 days of approval from CRWQCB. LACO is tentatively scheduling the excavation activities to commence in mid-July 2005.

REFERENCES

LACO, 2005. *Metals Investigation Status Report*. Unpublished report for the HCDEH.

LIST OF FIGURES, TABLES, AND ATTACHMENTS

Figure 1: Location Map
Figure 2: Background Metals Sampling Location Map
Figure 3: Approximate Areas of Proposed Over-Excavation

Table 1: Current and Historical Analytical Results for Background Metals in Soil

Attachment 1: Laboratory Analytical Reports
Attachment 2: LACO Standard Operating Procedure No. 1

P:\5100\5189 KD Invest\Workplans\Metals Over-Ex WP.doc

TABLE 1: Current and Historical Analytical Results for Background Metals in Soil
Roger's Garage
KD Investments
LACO Job No.: 5189.04

Reading No	Sample ID	Mo	Zr	Sr	Rb	Pb	As	Hg	Zn	Cd	Cu	Ni	Fe	Mn	Cr	Ba	Sn
XRF Analysis, collected March 28, 2005																	
372	TCP: 0.5-	ND*	139.89	46.67	29.46	ND	ND*	ND*	ND	ND*	ND*	ND	25,633.97	ND*	ND	ND	ND*
373	1.0	ND	165.44	32.69	43.71	ND	ND	ND	ND	ND	ND	ND	27,645.99	ND	ND	ND	ND
374	JCS-N:	ND	105.35	66.32	40.13	ND	ND	ND	228.04**	ND	ND	ND	20,943.55	ND	ND	301.11	ND
376	0.5-1.0	ND	123.46	57.36	33.79	68.34	ND	ND	165.79	ND	ND	ND	20,062.97	ND	ND	288.19	ND
377	JCS-S:	ND	88.87	84.6	31.93	ND	ND	ND	ND	ND	ND	ND	27,265.38	ND	ND	257.8	ND
378	0.5-1.0	ND	94.48	40.4	28.62	ND	ND	ND	ND	ND	ND	ND	26,173.99	ND	ND	238.57	ND
379	GCR: 0.5-	ND	61.59	ND	28.58	ND	ND	ND	ND	ND	ND	ND	18,894.94	ND	ND	159.41	ND
380	1.0	ND	54.56	29.3	27.46	ND	ND	ND	ND	ND	ND	ND	16,319.54	ND	ND	180.52	ND
Laboratory Analysis, collected May 5, 2005																	
	JCS-NW	---	---	---	---	10	---	---	32	<2.0	---	32	---	---	37	---	---
	JCS-SW	---	---	---	---	16	---	---	49	<2.0	---	49	---	---	57	---	---
	HYLAND	---	---	---	---	37	---	---	63	<2.0	---	20	---	---	34	---	---
	PG&E	---	---	---	---	22	---	---	44	<2.0	---	35	---	---	46	---	---
Mean Background Concentrations		ND	104	51	33	**31**	ND	ND	71	ND	ND	34	22,868	ND	44	238	ND
Standard Deviations		ND	38	20	6	23	ND	ND	54	ND	ND	12	4,326	ND	10	57	ND

*: As detection limits in XRF analysis varied widely, NDs were not used in calculation of means.

** If multiple readings were obtained for any analyte in an XRF sample, the lowest reading was used in calculating the mean.

Attachment 1

NORTH COAST LABORATORIES LTD.

DRG
CSM

May 12, 2005

RECEIVED
LACO ASSOCIATES
MAY 12 2005
BY: JG

DANCO Builders
5251 Ericson Way
Arcata, CA 95521

Order No.: 0505132
Invoice No.: 50070
PO No.:
ELAP No. 1247-Expires July 2006

Attn: Dan Johnson/KD Investments

RE: 5189.03, Roger's Garage

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	5189-JCS-SW
02A	5189-JCS-NW
03A	5189-HYLAND
04A	5189-PGE

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Lab Manager

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 12-May-05
WorkOrder: 0505132

ANALYTICAL REPORT

Client Sample ID: 5189-JCS-SW **Received:** 5/5/05 **Collected:** 5/5/05 0:00
Lab ID: 0505132-01A

Test Name: ICAP Metals **Reference:** EPA 6010B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Cadmium	ND	2.0	µg/g	1.0	5/10/05	5/12/05
Chromium	57	2.0	µg/g	1.0	5/10/05	5/12/05
Lead	16	10	µg/g	1.0	5/10/05	5/12/05
Nickel	49	5.0	µg/g	1.0	5/10/05	5/12/05
Zinc	49	5.0	µg/g	1.0	5/10/05	5/12/05

Client Sample ID: 5189-JCS-NW **Received:** 5/5/05 **Collected:** 5/5/05 0:00
Lab ID: 0505132-02A

Test Name: ICAP Metals **Reference:** EPA 6010B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Cadmium	ND	2.0	µg/g	1.0	5/10/05	5/12/05
Chromium	37	2.0	µg/g	1.0	5/10/05	5/12/05
Lead	10	10	µg/g	1.0	5/10/05	5/12/05
Nickel	32	5.0	µg/g	1.0	5/10/05	5/12/05
Zinc	32	5.0	µg/g	1.0	5/10/05	5/12/05

Client Sample ID: 5189-HYLAND **Received:** 5/5/05 **Collected:** 5/5/05 0:00
Lab ID: 0505132-03A

Test Name: ICAP Metals **Reference:** EPA 6010B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Cadmium	ND	2.0	µg/g	1.0	5/10/05	5/12/05
Chromium	34	2.0	µg/g	1.0	5/10/05	5/12/05
Lead	37	10	µg/g	1.0	5/10/05	5/12/05
Nickel	20	5.0	µg/g	1.0	5/10/05	5/12/05
Zinc	63	5.0	µg/g	1.0	5/10/05	5/12/05

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5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 12-May-05
WorkOrder: 0505132

ANALYTICAL REPORT

Client Sample ID: 5189-PGE **Received:** 5/5/05 **Collected:** 5/5/05 0:00
Lab ID: 0505132-04A

Test Name: ICAP Metals **Reference:** EPA 6010B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Cadmium	ND	2.0	µg/g	1.0	5/10/05	5/12/05
Chromium	46	2.0	µg/g	1.0	5/10/05	5/12/05
Lead	22	10	µg/g	1.0	5/10/05	5/12/05
Nickel	35	5.0	µg/g	1.0	5/10/05	5/12/05
Zinc	44	5.0	µg/g	1.0	5/10/05	5/12/05

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707-822-4649 Fax 707-822-6831

Chain of Custody

0505132

LABORATORY NUMBER:

Attention: Dan Johnson
Results & Invoice to: KD Investments
Address:
Phone:
Copies of Report to: C. Manhart @ LACO
Sampler (Sign & Print): K Erickson

TAT: ☐ 24 Hr ☐ 48 Hr ☒ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 5189.03
Project Name: Rogers Garage
Purchase Order Number:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: LUFT 5
	5189-JCS-SW	5/5/05	AM	SOIL	None	11	
	5189-JCS-NW	"	"	"			
	5189-HYLAND	"	"	"			
	5189-PGE	"	"	"			

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

VST collected intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Kwen Erickson	5/5/05 11:10	SK-THOMSON	5/5/05 11:10

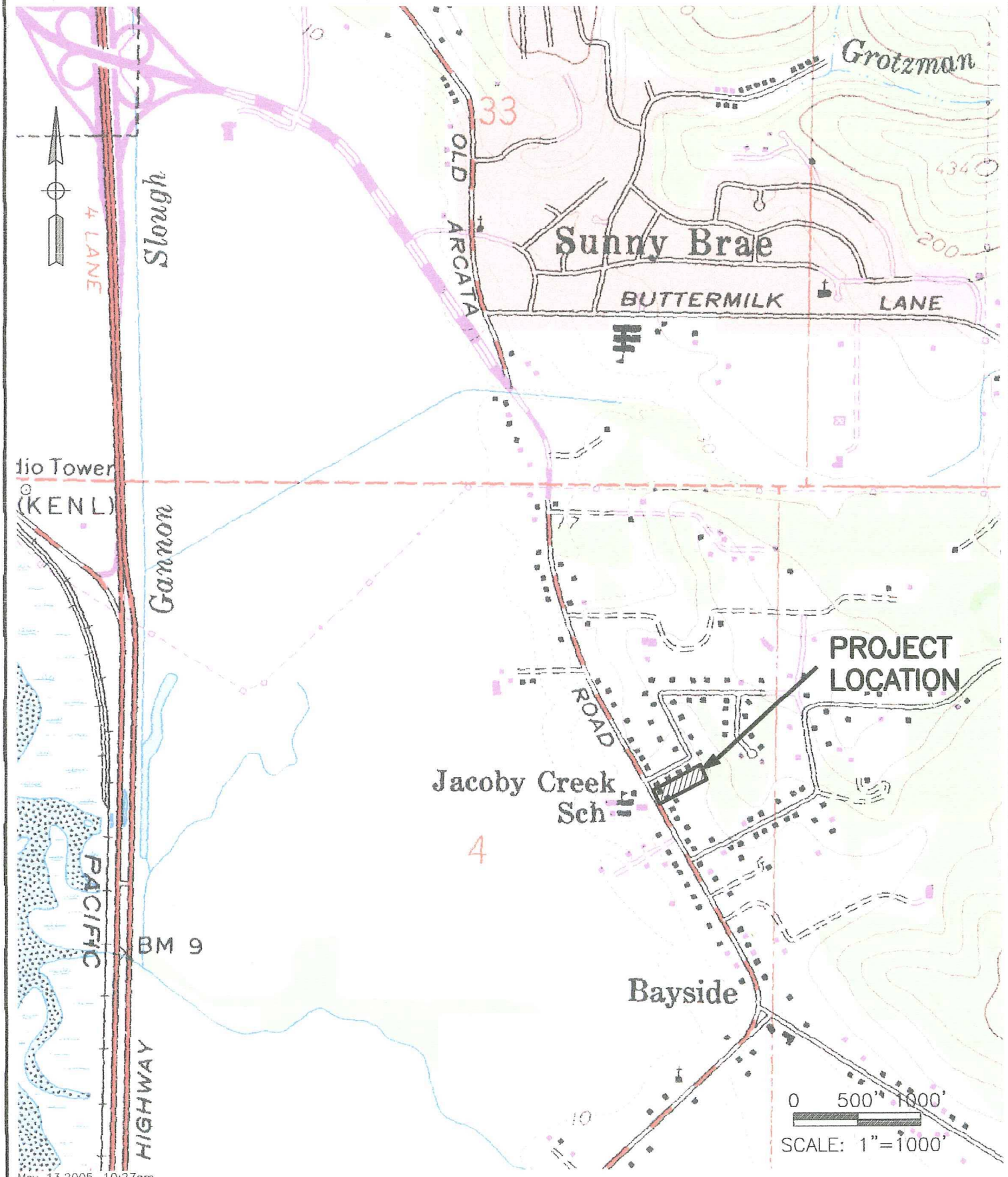
SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

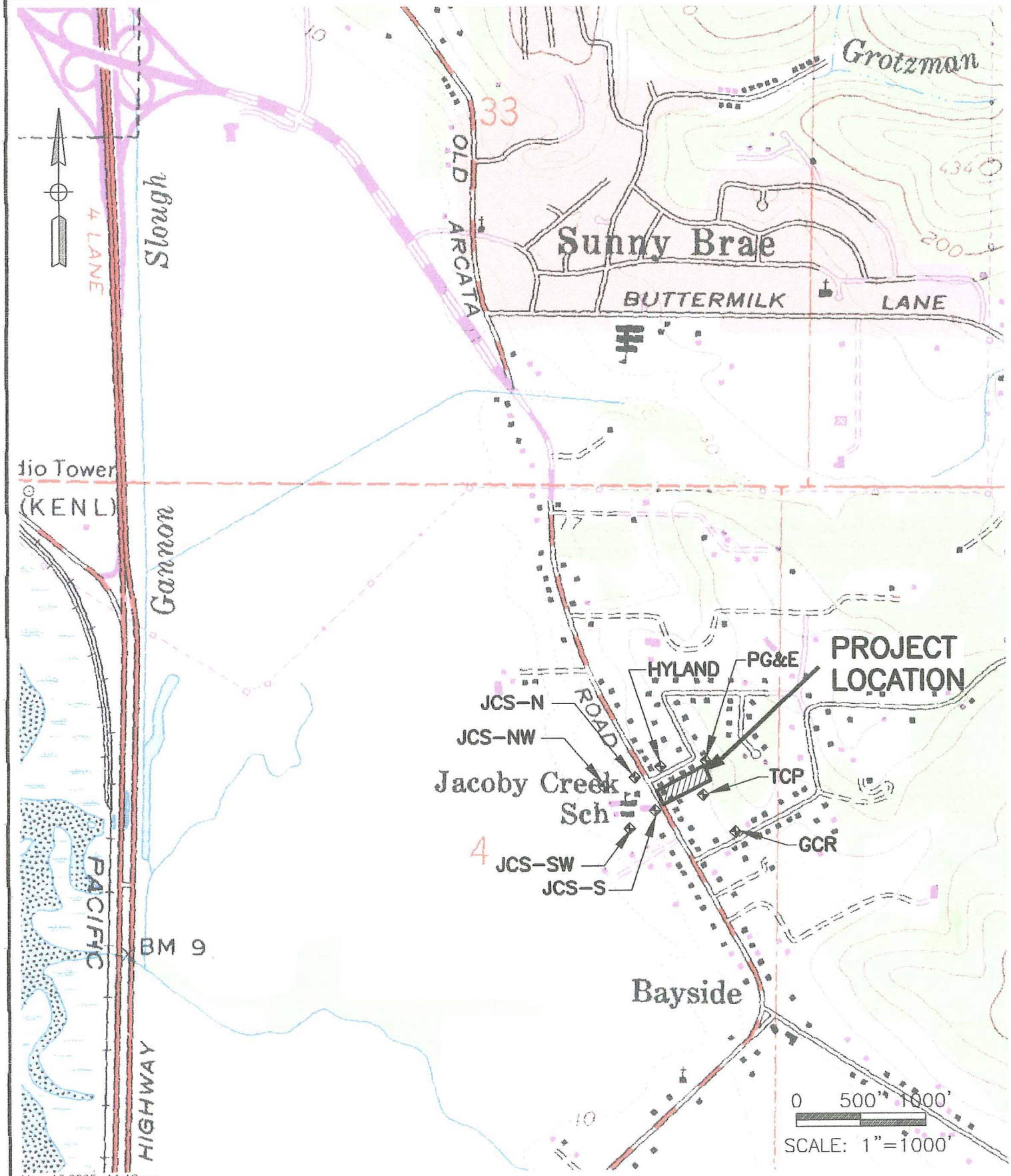
ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT: WORKPLAN FOR OVER-EXCAVATION	BY: RJM	FIGURE: 1
	CLIENT: KD INVESTMENTS	DATE: 5/13/05	
	LOCATION: FORMER ROGER'S GARAGE, ARCATA	CHECK: CV	JOB NO.: 5189.04
	LOCATION MAP	SCALE: 1"=1000'	



May 13,2005-10:27am
T:\CADFILES\5100\5189 KD INVESTMENTS\dwg\5189-WP-OVER-EX may05\ 5189LOC.dwg

LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	WORKPLAN FOR OVER-EXCAVATION	BY	RJM	FIGURE
	CLIENT	KD INVESTMENTS	DATE	5/13/05	2
	LOCATION	FORMER ROGER'S GARAGE, ARCATA	CHECK		JOB NO.
		BACKGROUND METALS SAMPLING LOCATION	SCALE	1"=1000'	5189.04



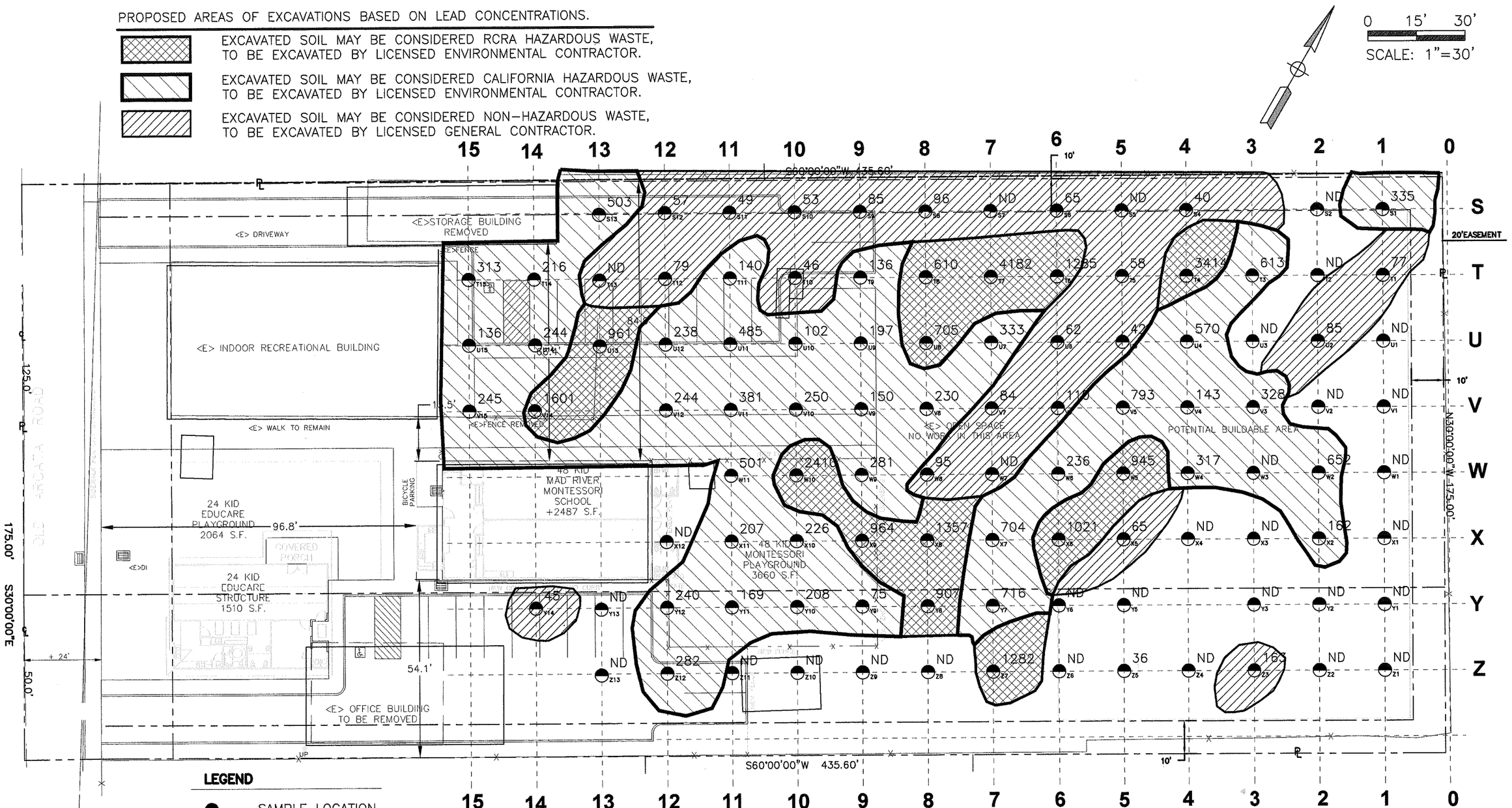
May 13,2005-11:18am
T:\CADFILES\5100\5189 KD INVESTMENTS\dwg\5189-WP-OVER-EX may05\ 5189LOC.dwg

PROPOSED AREAS OF EXCAVATIONS BASED ON LEAD CONCENTRATIONS.

EXCAVATED SOIL MAY BE CONSIDERED RCRA HAZARDOUS WASTE, TO BE EXCAVATED BY LICENSED ENVIRONMENTAL CONTRACTOR.

EXCAVATED SOIL MAY BE CONSIDERED CALIFORNIA HAZARDOUS WASTE, TO BE EXCAVATED BY LICENSED ENVIRONMENTAL CONTRACTOR.

EXCAVATED SOIL MAY BE CONSIDERED NON-HAZARDOUS WASTE, TO BE EXCAVATED BY LICENSED GENERAL CONTRACTOR.



LEGEND

T5	SAMPLE LOCATION
	LEAD CONCENTRATIONS IN SOIL ARE BETWEEN 0.5'–1.0'
ND	BELOW DETECTION LIMITS
	CONCENTRATIONS IN PARTS PER MILLION (PPM) CONCENTRATIONS REPRESENT AVERAGE OF ALL XRF DATA ASSOCIATED WITH THAT POINT

NOTE: BASE MAP LAYOUT RECEIVED FROM KASH BOODJEH, ARCHITECT, 3/19/05

DISCLAIMER: AREAS AS SHOWN ARE APPROXIMATE & WILL BE FURTHER DELINEATED IN FIELD.

NO.	REVISION	BY	CHK	DATE

LACO ASSOCIATES
CONSULTING ENGINEERS
216 J ST. EUREKA, CA 95501 (707)443-5054

WORKPLAN FOR OVER-EXCAVATION
APPROXIMATE AREAS OF PROPOSED OVER-EXCAVATION

KD INVESTMENTS
FORMER ROGER'S GARAGE

SCALE	1"= 30'
DRAWN	RJM/BAB
CHECK	GJE
APPVD	
DATE	5/10/05
JOB NO.	5189.04
FIGURE	3

May 13,2005- 11:05am
T:\CADFILES\5100\5189 KD INVESTMENTS\dwg\5189-WP-OVER-EX may05\ 5189-FIG3.dwg