102532



December 12, 2003

Mr. Robert Ribbing Fleischmann's Yeast 240 Larkin Williams Industrial Court Fenton, Missouri 63026

RE: Case Closure Summary

Former Fleischmann's Yeast Facility 921 98<sup>th</sup> Avenue, Oakland, California *ACC Project Number: 6725-001.03* 

Dear Mr. Ribbing:

ACC Environmental Consultants, Inc. has prepared the following Case Closure Summary Report (Closure Summary) as requested by the Alameda County Health Care Services Agency (ACHCSA). On your behalf, ACC will forward a copy of the Closure Summary to Mr. Amir Gholami, the case regulator at the ACHCSA, for review and approval.

The primary goal of this summary is to convince ACHCSA to close the case with no further action. The secondary goal is to obtain specific technical rationale from the ACHCSA regarding the former underground storage tanks that prevents approving regulatory closure at this time. In either case, ACC is requesting timely consideration and review of this Closure Summary and is available at the convenience of ACHCSA.

If you have any questions regarding the Summary, please contact me at (510) 638-8400, extension 109 or email me at <a href="mailto:ddement@accenv.com">ddement@accenv.com</a>.

Sincerely,

David R. DeMent, RG, REA II Environmental Division Manager

/trb:drd

**Enclosures** 



## CASE CLOSURE SUMMARY REPORT

921 98th Avenue Oakland, California

ACC Project Number 6725-001.03

Prepared for:

Mr. Robert Ribbing
Fleischmann's Yeast
240 Larkin Williams Industrial Court
Fenton, Missouri 63026

December 12, 2003

Prepared by:

Trevor Bausman Project Administrator

Reviewed by:

David R. DeMent, RG, REA II Environmental Division Manager

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#### CASE CLOSURE SUMMARY REPORT

# 921 98th Avenue Oakland, California

On behalf of Fleischmann's Yeast (Client), ACC Environmental Consultants, Inc. (ACC) has prepared this Case Closure Summary Report (Closure Summary) at the request of the Alameda County Health Care Services Agency (ACHCSA). This Closure Summary describes site investigation and remediation activities performed to date at 921 98th Avenue, Oakland, California (Site) for the purpose of assisting the ACHCSA in approving regulatory closure for two gasoline underground storage tanks (USTs) formerly located at the Site.

#### 1.0 BACKGROUND

The subject property is located along the northeast corner of 98th Avenue and San Leandro Street in Alameda County (Figure 1). The Site formerly contained two gasoline USTs and associated product dispensers. While ACC did not find any regulatory records of the gasoline USTs' removal, both USTs were apparently last used and removed in the early 1980's.

In June 2002, ACC contracted with DCM Construction, Inc. (DCM) of Dublin, California, to excavate in the vicinity of the two former gasoline USTs. These activities were intended to verify that the gasoline USTs had been removed. Exploratory excavation at gasoline UST designated T1 revealed broken and/or cut product and vent lines and engineered fill where soils should have been native silts and clays (Figure 2). Since exploratory excavation at gasoline UST designated T2 was inconclusive, ACC contracted with GeoTech Utility Locating (GeoTech), of El Cerrito, California, a subsurface utility locating firm, to scan the area of the suspect USTs. The results of a subsurface magnetometer survey were more conclusive and indicated that no metallic anomalies were located in the area of the former gasoline USTs.

#### 2.0 SUBSURFACE CHARACTERIZATION

#### 2.1 Exploratory Soil Borings - September 2002

#### 2.1.1 Field Activities

On September 16, 2002, ACC advanced eight exploratory soil borings (designated B1 through B8) at select locations adjacent to former USTs T1 and T2 (Figure 2). The locations of the borings were marked with white paint and Underground Service Alert was notified at least 48 hours prior to commencing work. A soil boring permit was obtained form Alameda County Public Works Agency.

The eight exploratory soil borings were advanced by continuously coring with a four-foot long, hydraulically-driven, hollow-stem Geoprobe® sampling tool equipped with 2-inch inside-diameter clear acetate liners. Soil borings B1 and B2 were advanced adjacent to and on each side of former gasoline UST T1. Soil boring B3 (also designated T1-Disp) was advanced at the former dispenser for UST T1. Soil borings B4 and B5 were advanced adjacent to and on two sides of former gasoline UST T2. Soil boring B6 was advanced at the midpoint between former UST T2 and its former

product dispenser located inside the existing building. Finally, soil borings B7 and B8 were advanced directly adjacent to the formaldehyde UST as close as physical parameters allowed. Grab groundwater samples were collected in soil borings B1, B4, and B7 by advancing a Geoprobe® sampling tool equipped with a clean, four-foot-long stainless steel screen. When the probe was advanced to approximately 20 feet below ground surface (bgs), the external sampling probe was pulled upwards four feet to expose the internal screen to the water-bearing formation. A grab groundwater sample was then retrieved through the rods with either a pre-cleaned stainless steel bailer or clean polyethylene tubing equipped with a check valve. Grab groundwater samples were collected in 40-milliliter VOA vials without headspace. Following collection, the vials were labeled, placed in a pre-chilled insulated container, and then transported to STL San Francisco (STL-SF), a state-certified laboratory, for analysis.

Drilling was performed under the direction of a California Registered Geologist, and the subsurface materials in the borings were identified using visual and manual methods. Soils in each soil boring were logged and classified during drilling operations according to the Unified Soil Classification System (USCS). Following drilling and sample collection, each boring location was abandoned with neat cement to just below the surface (2 to 3 inches). The surface of each boring location was completed with concrete to grade and colored to match the surrounding material.

## 2.1.2 Analytical Results

Eleven soil samples and three grab groundwater samples from the September 2002 exploratory borings were collected and analyzed for TPHg, BTEX, and MTBE by EPA Method 8260B. Soil and grab groundwater sample analytical results are summarized in Tables 1 and 2 below.

#### 2.1.3 Extent of Soil and Groundwater Pollution

Soil

Exploratory soil borings revealed that soils at the Site consist of fine-grained silts and clays from the surface to approximately 15 to 16 feet bgs. These soils typically limit the migration potential of released total petroleum hydrocarbons (TPH) due to their adsorption to the soil matrix and the low soil permeability. Based on the findings of exploratory soil excavation and accurately mapping the former UST locations from a scaled site plan, ACC believes that the exploratory soil borings advanced were correctly placed directly adjacent to the former USTs, product pipelines, and product dispenser. Therefore, ACC estimates that the sample analyses of soil and grab groundwater samples collected in the soil borings are indicative of worst-case conditions, with any residual TPH concentrations decreasing significantly with distance from the former UST excavations. Residual TPH was identified primarily in soil from 8 to 15 feet bgs. Some TPH-impacted soil was identified in soil borings B3 (T1-Disp) and B6, but these impacts were relatively minor and decreased significantly with vertical distance.

#### Water

First-encountered groundwater was logged in poor quality clayey sands at approximately 16 feet bgs. Grab groundwater sample analytical results indicate that water is being impacted by residual TPH in soil at each former UST location. However, based on the relatively low BTEX to TPHg ratios and the approximate age of the former USTs, weathering is occurring and BTEX is likely being preferentially degraded by natural attenuation processes.

ACC reviewed topographic contours on the San Leandro Quadrangle and estimates the regional groundwater flow direction to be northwest. A grab groundwater sample collected in soil boring B7 located north of USTs T1 and T2 reported only 1.8 ppb MTBE. While the location of soil boring B7 is estimated to be somewhat crossgradient of the USTs, migration in first-encountered groundwater in this area is typically defined more by diffusion than groundwater flow direction. As such, the analytical results reported in the grab groundwater sample collected from soil boring B7 likely approximate the horizontal extent of residual TPH impact in groundwater.

Based on the findings summarized in ACC's January 17, 2003 Subsurface Investigation Report, the City of Oakland Fire Services Agency referred the case to the ACHCSA for regulatory oversight. The case was assigned to Mr. Amir Gholami, who verbally approved ACC's Work Plan to perform additional field work.

## 2.2 Exploratory Soil Borings - August 2003

#### 2.2.1 Field Activities

On August 4, 2003, ACC advanced twelve additional exploratory soil borings (designated B9 through B20) at select locations adjacent to and downgradient of the former gasoline USTs (Figure 2). The approved soil boring locations were marked with white paint and Underground Service Alert was notified at least 48 hours prior to commencing work. A soil boring permit was obtained from the Alameda County Public Works Agency.

The additional exploratory soil borings were advanced by continuously coring with a four-foot long, hydraulically-driven, hollow-stem Geoprobe® sampling tool equipped with 2-inch inside-diameter clear acetate liners. Soil borings B9, B10, and B11 were advanced adjacent to and on each side of former gasoline UST T1. Soil borings B12 was advanced approximately at the midpoint between the two former gasoline USTs. Soil borings B13 and B14 were advanced adjacent to and on each side of former gasoline UST T2. Finally, soil borings B12 and B15 through B20 were advanced in accessible locations downgradient of the two former gasoline USTs for the purposes of collecting grab groundwater samples. Soil samples were collected and analyzed from soil borings B9 through B11 and B13 through B15. Grab groundwater samples were collected in soil borings B10, B12, B13, B15 through B18, and B20 by advancing a Geoprobe® sampling tool equipped with a clean, four-footlong stainless steel screen. Soil boring B19 encountered metallic refusal at five feet bgs, indicative of rebar underneath the concrete slab surface. When the probe was advanced to approximately 20 feet bgs, the external sampling probe was pulled upwards four feet to expose the internal screen to the water-bearing formation. A grab groundwater sample was then retrieved through the rods with either

a pre-cleaned stainless steel bailer or clean polyethylene tubing equipped with a check valve. Grab groundwater samples were collected in 40-milliliter volatile organic analysis (VOA) vials without headspace. Following collection, the VOA vials were labeled, placed in a pre-chilled insulated container, and then transported following chain of custody protocol to STL San Francisco (STL-SF), a state-certified laboratory, for analysis.

Drilling was performed under the direction of a staff geologist, and the surface materials in the borings were identified using visual and manual methods. Soils in each soil boring were logged and classified during drilling operations according to the Unified Soil Classification System (USCS). Following drilling and sample collection, each soil borings was abandoned with neat cement flush to grade.

## 2.2.2 Analytical Results

Fourteen soil samples and eight grab groundwater samples were collected and analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE). Soil sample analytical results are summarized in Table 3 and the grab groundwater sample results are summarized in Table 4, both of which are attached.

#### 2.2.3 Extent of TPH Impacts in Soil and Groundwater

#### Soil

The September 2002 and the August 2003 exploratory soil boring investigations revealed that soils across the area of investigation consist of fine-grained silts and clays from the surface to approximately 15 to 16 feet bgs. These soils typically limit the migration potential of released TPHg due to petroleum hydrocarbon adsorption to the soil matrix and the low soil permeability. Soil impacts appear to be highly localized in the fine-grained silty clays. TPHg concentrations in soil ranged from nondetect (less than 1 ppm) to 2,500 ppm immediately adjacent to the former UST in soil boring B9, and benzene concentrations ranged from nondetect (less than 0.005 ppm) to 19 ppm immediately adjacent to the former UST in soil boring B9.

#### Water

First-encountered groundwater was logged in poor quality clayey sands at approximately 16 feet bgs. Grab groundwater sample analytical results indicate that water is being impacted by residual TPHg in soil at each former UST location. However, based on the relatively low BTEX to TPHg ratios and the approximate age of the former USTs, weathering is occurring and BTEX is being preferentially degraded by natural attenuation processes.

ACC estimates the regional groundwater flow direction to be northwest. Iso-concentration maps for TPHg and benzene, illustrated on Figures 3 and 4 respectively, exhibit a slight elongation in the northwest direction. Due to relatively poor aquifer qualities and a relatively flat estimated groundwater gradient, migration in groundwater is primarily through diffusion with some elongation in the groundwater flow direction. Therefore, the analytical results reported in the grab groundwater

samples collected from soil borings B18 and B20 approximate the horizontal extent of reportable TPHg and benzene impact in groundwater and demonstrate that the plume of impacted groundwater originating from each former gasoline UST is relatively small and localized to the immediate area of each UST.

## 3.0 INVESTIGATIVE METHODS

ACC utilized hydraulic "direct push" sampling devices to collect undisturbed soil samples and a stainless steel hydropunch-type sampler or temporary plastic casing was used to bail representative "grab" groundwater samples. Soil borings were continuously cored and depth intervals selected for analysis were immediately capped with Teflon® tape and tight fitting plastic caps. Each ACC "grab" groundwater sample was collected in the top two to three feet of the saturated zone, therefore, analytical results are likely skewed high. Similarly, a "grab" groundwater sample reporting low or non-detectable analytical results typically represents a plume boundary. Monitoring well analytical results are generally one to two orders of magnitude less than a given "grab" groundwater sample analytical result collected in the same location.

In summary, low or non-detectable "grab" groundwater sample analytical results can be trusted to represent groundwater conditions but elevated "grab" groundwater sample analytical results are generally not representative of groundwater conditions that would be observed in monitoring wells. ACC is confident that groundwater at the Site has been adequately characterized for investigative purposes and ongoing groundwater monitoring is not necessary to understand potential long-term groundwater impacts associated with the former USTs.

#### 4.0 LOCAL AND REGIONAL HYDROGEOLOGY

## 4.1 Subsurface Soils

The surface of the Site consists of concrete and/or asphalt pavement underlain by approximately 3 to 6 inches of sand and/or gravel baserock. Subsurface soil conditions were highly consistent across the Site. In general, soils consisted of uniform silty clay and clay to a depth of approximately 16 feet bgs. The fine-grained clays were generally dark olive green to olive gray, medium stiff, moderately to highly plastic, damp, and displayed low estimated permeability. At approximately 15 to 16 feet bgs, sand content began to increase with depth and saturated SC clayey sand is observed. This SC zone appears to be first-encountered groundwater.

#### 4.2 Groundwater

First-encountered groundwater was logged in poor quality clayey sands at approximately 16 feet bgs. Grab groundwater sample analytical results indicate that groundwater is being impacted by residual TPHg leaching from soil at each former UST location. However, based on the relatively low BTEX to TPHg ratios and the approximate age of the former USTs, weathering is occurring and BTEX is being preferentially degraded by natural attenuation processes. TPHg and benzene plumes are localized in the immediate vicinity of former UST T1 and its former fuel pump and the former fuel pump location for UST T2 (Figure 3 and 4).



#### 5.0 BENEFICIAL USES

TPH impacts in soil appear to be variable and localized in immediate proximity to the former USTs and dispenser pumps. TPH-impacted groundwater appears to be localized in first-encountered water in the vicinity of USTs T1 and T2 and the former dispenser pumps. Impacted groundwater is confined to the areas immediately downgradient of each tank/dispenser and the potential for offsite migration is nonexistent. There is no practical potential exposure to TPH-impacted groundwater at the Site and potential exposure to TPH-impacted soil is minimal. Furthermore, concentrations of residual petroleum hydrocarbons in groundwater are decreasing with time through natural attenuation processes.

Investigation data obtained to date indicate that releases from the USTs are old, weathered, and demonstrate a significant degradation of BTEX constituents. Benzene and MTBE concentrations are fairly low compared to reported TPHg concentrations. Findings of subsurface investigation indicate that a sensitive receptor survey is not warranted.

## 6.0 REMEDIAL ACTIVITIES

Source removal was completed with the removal of the USTs. No other active remediation has been performed in regards to the former USTs. TPH-impacted soil in the vicinity of soil boring B9 appears to be limited. Based on the documented residual TPHg and BTEX concentrations in soil and groundwater, no additional remediation appears warranted.

#### 7.0 CONCLUSIONS

The plume of impacted groundwater is relatively small and primarily localized to the first-encountered water-bearing zone at 16 feet bgs in the immediate vicinity of each of the former gasoline UST's T1 and T2. The potential that any detectable TPH impacts in groundwater are migrating off the subject property is nonexistent. Fine-grained soils present at the Site exhibit low permeability and typically prohibit any significant transfer of TPHg or BTEX constituents in soil gas. This eliminates the primary migration route for potential human exposure, and decreases the necessity for additional human health risk assessment.

Based on results of the subsurface site investigations, ACC concludes:

- The Site has been adequately investigated through subsurface investigations in September 2002 and August 2003;
- The original primary sources, the two former gasoline USTs and associated product piping and vent lines, were removed in the mid-1980's;
- A limited volume of hydrocarbon-impacted soil exists around former UST T1 and UST T2 but the extent of impact appears to be highly localized in the fine-grained soils present onsite;

- No significant health threat is estimated to exist due to the location and depth of impacted soil and groundwater, the proposed commercial use of the Site for the foreseeable future, and the relatively minor and likely decreasing concentrations of residual hydrocarbons in the subsurface;
- Subsurface characterization indicates that no significant source of petroleum hydrocarbons is present at the Site;
- All significant subsurface sources of petroleum hydrocarbons have been removed;
- TPHg and benzene plumes in groundwater appear to be highly localized around former UST T1 and the former fuel pump location for UST T2; and
- The lack of significant concentrations of constituents of concern suggests that the Site presents no significant risk to human health or the environment.

## 8.0 REQUEST FOR SITE CLOSURE

On behalf of Fleischmann's Yeast, ACC requests that the Site be evaluated for regulatory site closure as a low-risk groundwater case based on the following:

- No active source exists and residual petroleum hydrocarbons identified in soil are generally deemed less than applicable risk-based screening levels;
- The plume of impacted groundwater is defined, with minimal or no migration in the estimated groundwater flow direction;
- The Site has been adequately characterized;
- As is typical in this type of UST release scenario, the plume of impacted groundwater is stable and confined to the immediate vicinity of each former UST and/or dispenser;
- No water wells or other sensitive receptors are likely to be impacted;
- The Site likely presents no significant risk to human health due to the relatively low concentrations of constituents of concern in the majority of analyzed soil samples and the fine-grained soils present at the Site;
- The Site presents no significant risk to the environment due to the relatively low concentrations of constituents of concern; and
- The Site is a commercial operation and will likely remain so in the foreseeable future. ACC understands that the Site is being developed as a distribution/warehouse facility.

Site Address: 921 98th Street, Oakland, CA
Sampling Date: 9/16/02

Additional Subsurface Investigation Report

Table 1 - Soil Results September 2002

Sample ID	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylene	MTBE
B1-11.0	300	2.3	< 0.62	6.3	< 0.62	< 0.62
B1-15.0	410	5.5	9.3	9.6	43	< 3.1
B2-8.0	26	< 0.62	< 0.62	1	1.7	< 0.62
B2-12.0	1,400	23	70	48	230	< 6.2
B4-12.0	130	< 0.62	< 0.62	3.3	2.4	< 0.62
B4-16.0	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B6-5.0	110	1.6	< 0.62	2.3	9	< 0.62
B5-8.0	870	< 6.2	< 6.2	< 6.2	< 6.2	< 6.2
B5-12.0	180	< 0.62	< 0.62	1.4	< 0.62	< 0.62
T1 DISP- 2.5	370	< 6.2	< 6.2	13	47	< 6.2
TI DISP- 5.0	80	< 0.62	< 0.62	1.2	< 0.62	< 0.62

Notes: All results reported in milligrams per kilogram (mg/kg), approximately equal to parts per million (ppm)

Table 2 - Groundwater Results September 2002

Sample ID	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylene	MTBE
B1 -W	8,600	1,100	340	730	390	<10
B4 -W	17,000	120	10	850	330	< 10
B7 -W	< 50	< 0.50	< 0.50	< 0.50	<1.0	1.8

Notes: All results reported in micrograms per liter (\(\pig/L\)), approximately equal to parts per billion (ppb)

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<sup>&</sup>lt; Sample tested below the laboratory minimum detection limit indicated

<sup>&</sup>lt; Sample tested below the laboratory minimum detection limit indicated

Project Number: 6725-001.02 Site Address: 921 98th Street, Oakland, CA

Sampling Date: 9/16/02 **Additional Subsurface Investigation Report** 

Table 3 - Soil Results August 2003

Sample ID	TPHg	Benzene	Toluene	Ethyl-	Total	MTBE
Sample ib	Triig	Detizelle	roidesie _	benzene	Xylene	MIIDL
B9-12.0	2,500	19	95	40	230	<2.5
B10-12.0	860	7.3	41	18	130	<0.5
B11-4.0	3	0.21	<0.005	0.12	0.044	<0.005
B11-8.0	1.7	0.027	<0.005	0.019	<0.005	<0.005
B11-12.0	400	0.76	7.6	5.8	35	<0.5
B11-16.0	<1	0.011	0.021	0.016	0.077	<0.005
B13-4.0	<1	<0.005	<0.005	<0.005	<0.005	<0.005
B13-8.0	<1	<0.005	0.0056	< 0.005	0.0099	< 0.005
B13-12.0	110	<0.5	<0.5	2	<0.5	<0.5
B13-16.0	<1	<0.005	<0.005	<0.005	<0.005	< 0.005
B14-8.0	5.2	< 0.005	<0.005	< 0.005	<0.005	<0.005
B14-12.0	35	<0.023	<0.023	<0.023	<0.023	<0.023
B1 <u>4-16.</u> 0	<1	<0.005	<0.005	<0.005	<0.005	<0.005
B15-8.0	9	<0.054	<0.023	0.024	<0.023	<0.023

Notes: All results reported in milligrams per kilogram (mg/kg), approximately equal to parts per million (ppm)

Table 4 - Groundwater Results August 2003

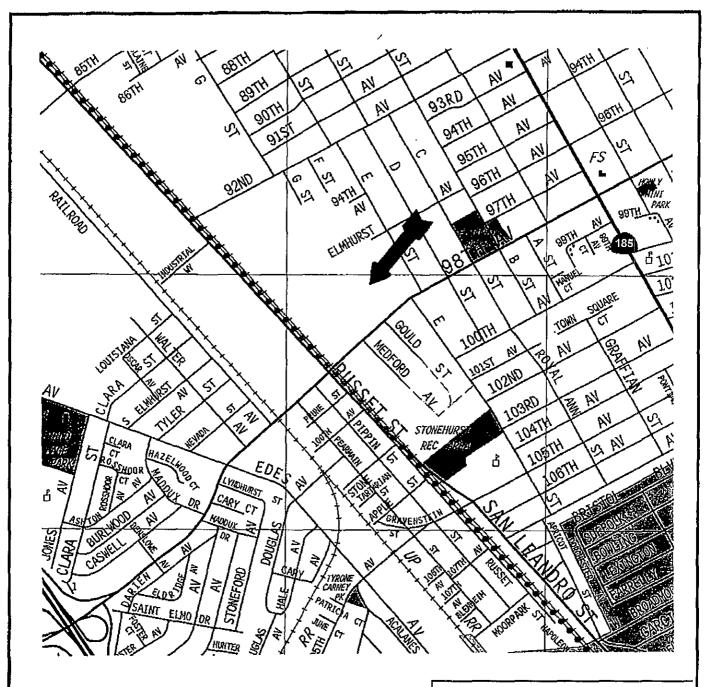
Sample ID	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylene	MTBE
B10-W	190	16	36	6.6	30	1.3
B12-W	72	<0.50	<0.50	2	<1.0	1.6
B13-W	17,000	58	<5.0	620	29	<5.0
-B15-W	72,000	790	<25	950	530	<25
B16-W	4,100	59	100	100	440	<2.5
B17-W	16,000	7.5	3.6	390	420	<2.5
B18-W	74	1.1	<0.50	<0.50	<1.0	1.1
B20-W	<50	1	0.62	0.5	1.2	0.98

Notes: All results reported in micrograms per liter (ug/L), approximately equal to parts per billion (ppb)

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<sup>&</sup>lt; Sample tested below the laboratory minimum detection limit indicated

<sup>&</sup>lt; Sample tested below the laboratory minimum detection limit indicated



Source: The Thomas Guide, Bay Area 2002

Title: Location Map 921 98th Avenue Oakland, California

Figure Number: 1	Scale: None			
Project No.: 6725-001 *	Drawn By: EJG			
A.C.C	Date: 1/8/03			
ENVIRONMENTAL CONSULTANTS	N W = E			
7977 Capwell Drive, Sulte 100 Oakland, California 94621 (60) 638-8402 Fee (60) 638-8404				

