ADVANCED
SCIENCES, INC.

August 26, 1992

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

92 AUG 27 PM 2:36

Subject: Quarterly Groundwater Monitoring Report
FAA Oakland Airport TRACON Facility
1029 Grumman St.
Oakland, California

Dear Mr. Chan:

This letter has been prepared to provide the Alameda County Department of Environmental Health (DEH) and the California Regional Water Quality Control Board (CRWQCB) with quarterly groundwater monitoring results at the Federal Aviation Administration (FAA) Oakland International Airport Terminal Radar Approach Control (TRACON) facility. Groundwater samples collected on August 6, 1992, represent the first quarter of groundwater monitoring as required by the CRWQCB and as outlined in a proposal to Mr. Barney Chan, Alameda County DEH, dated February 10, 1992. Present groundwater sampling did not indicate measurable concentrations of total petroleum hydrocarbons (TPH) or benzene, toluene, ethylbenzene, and xylenes (BTEX).

BACKGROUND

The FAA Oakland Airport TRACON facility is located at 1029 Grumman St. in the northeast quarter of the southwest quarter of Section 20, Township 2 South, Range 3 West of the San Leandro 7.5-Minute Series Quadrangle, Alameda County, California (Figure 1). Earlier reports have incorrectly listed the site address as 8250 Earhart Rd. The site is located on relatively level surface topography with a surface elevation of approximately 7 feet above mean sea level.

The Oakland TRACON facility consists of a control building with an emergency generator and a former 1,000-gallon-capacity underground diesel tank (Figure 2). The land is located on a portion of a former U.S. Navy fuel storage area, is owned by Alameda County, is administered by the Port of Oakland, and is leased by the FAA.

4020 Murphy Canyon Road, Suite 500 San Diego, CA 92123-4301 (619) 560-8552 FAX (619) 560-8538

The 1,000-gallon-capacity diesel tank was removed by the FAA on May 2, 1991, under a permit issued by the Alameda County DEH. Upon excavation, no TPH or BTEX were detected in soil samples collected beneath the tank. A soil sample collected in the tank backfill stockpile (sample TRACON-5) was received by the laboratory in a broken container; thus, sample integrity had been compromised and the analytical results of 375 parts per million (ppm) may not be valid.

Groundwater was observed and sampled in the tank pit excavation at a depth of approximately 5 feet below ground surface following tank removal activities on May 2, 1991. A groundwater sample had a TPH concentration of 36.6 milligrams per liter with the majority of hydrocarbons slightly less than, at, and greater than C_{23}, indicating the presence of hydrocarbons heavier than the diesel fuel previously stored in the FAA tank. BTEX was not detected in groundwater beneath the tank. Possible petroleum hydrocarbon impacts on groundwater due to previous operations by the prior land owner are discussed in an Advanced Sciences, Inc. (ASI), Site Investigation report dated June 1992. ASI reported these results to Mr. Chan of the Alameda County DEH in a letter dated August 30, 1991. In this letter, ASI requested site closure from the Alameda County DEH.

In a letter to Mr. Charley Chamness of the FAA, dated July 26, 1991, Mr. Chan of the Alameda County DEH stated that the site had experienced an unauthorized release of petroleum hydrocarbons and requested a work plan to assess the impact to soil and/or groundwater and the extent of any such impact. In a letter to Mr. Jim Williams of the FAA, dated September 16, 1991, Mr. Chan denied the site closure request contained in the August 30, 1991, letter from ASI.

ASI was contracted by the FAA to develop and conduct a site investigation to assess the extent of hydrocarbon-affected soil and the potential for the diesel to impact groundwater quality at the FAA Oakland TRACON facility. A proposed groundwater monitoring plan was submitted to Mr. Chan and the CRWQCB on February 10, 1992.

On March 4, 1992, as part of the site investigation, three soil borings (AW-1 through AW-3) were advanced to depths of 15 feet. A soil sample collected at a depth of 5 feet in the vicinity of the former tank had a TPH concentration of 580 ppm with no detected BTEX concentrations. Soil borings AW-1 through AW-3 were converted to groundwater monitoring wells (Figure 2).

Following development, groundwater samples were collected from wells AW-1 through AW-3 on March 26, 1992. TPH was not detected in wells AW-1 through AW-3. BTEX was not detected, with the exception of toluene, ethylbenzene, and xylenes just over the lower limit of detection in well AW-2. The Site Investigation report, dated June 1992, concluded that diesel-affected soil may be limited to the immediate vicinity of the former tank location.

Soil remediation has been proposed for the site, and is tentatively scheduled for September 1992. Remediation of the former 1,000-gallon-capacity diesel tank pit area requires the removal of well AW-2 and its replacement (AW-4) located just outside the proposed remediation area (Figure 2).

QUARTERLY GROUNDWATER SAMPLING

The first round of quarterly groundwater sampling, following the site investigation sampling of March 1992 at the FAA Oakland Airport TRACON facility, was conducted by ASI personnel on August 6, 1992.

Sampling Methods

Prior to purging and sampling, water levels were measured in each well from the top of the polyvinyl chloride casing to the nearest one hundredth of a foot using a Solinst water level indicator. Water level data to date are presented in Table 1 and indicate that the groundwater gradient is towards the east-southeast.

Table 1
Groundwater level measurements
FAA Oakland TRACON facility
August 6, 1992

Well No.	Depth to Groundwater (ft) from TOC*	TOC Elevation (ft)	Groundwater Elevation (ft)
AW-1	3.53	11.28	7.75
AW-2	2.92	10.74	7.82
AW-3	3.33	10.92	7.59

*TOC = Top of casing

artificially high ?

Wells AW-1 through AW-3 are slow-recharging wells and, as such, were purged dry three times with a stainless-steel bailer, after being allowed to recharge to at least 90 percent of normal between purges. Purged well water is stored on-site in covered 55-gallon drums. During purging activities, groundwater pH, temperature, and conductivity were monitored and recorded on water sample logs (Attachment 1).

Following well purging, a disposable Teflon bailer was used to collect a groundwater sample from each well. Each sample was placed into a liter amber glass jar and two 40-milliliter (ml) glass vials. Each 40-ml glass vial was sealed with a Teflon-lined cap with no headspace. The

jars and vials were labeled, logged, placed into an insulated cooler with ice, and shipped to Calscience Environmental Laboratory of Stanton, California, under strict chain-of-custody protocol. The chain-of-custody form is presented as Attachment 2.

The groundwater sample in the liter glass jar was analyzed for TPH (as diesel) using California Department of Health Services methods. The samples in the two 40-ml glass vials were analyzed for BTEX concentrations using EPA Method 602.

Laboratory Analytical Results

Groundwater samples AW-1 through AW-3 contained no detectable concentrations of TPH or BTEX. The groundwater sampling results are presented in Table 2, and the laboratory analytical report is presented as Attachment 3.

Table 2
Groundwater analytical results
FAA Oakland TRACON facility
August 6, 1992

Well No.	TPH (ppm[a])	Benzene (µg/l[b])	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)
AW-1	< 0.05	< 0.25	< 0.25	< 0.25	< 0.5
AW-2	< 0.05	< 0.25	< 0.25	< 0.25	< 0.5
AW-3	< 0.05	< 0.25	< 0.25	< 0.25	< 0.5

[a]Parts per million
[b]Micrograms per liter

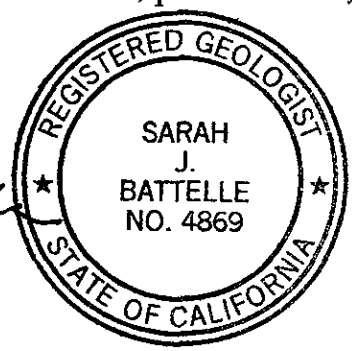
CONCLUSION

Data obtained from the first round of quarterly sampling conducted on August 6, 1992, did not indicate measurable concentrations of TPH or BTEX in the FAA Oakland Airport TRACON facility groundwater monitoring wells. These results are consistent with the previously collected groundwater sample data.

ASI will collect quarterly groundwater samples from wells AW-2 through AW-4 following remediation of the tank pit area, and report those findings to the Alameda County DEH and the CRWQCB on behalf of the FAA, to facilitate site closure.

If you have any questions or comments, please contact Jeff Waldman or me at (619) 560-8552.

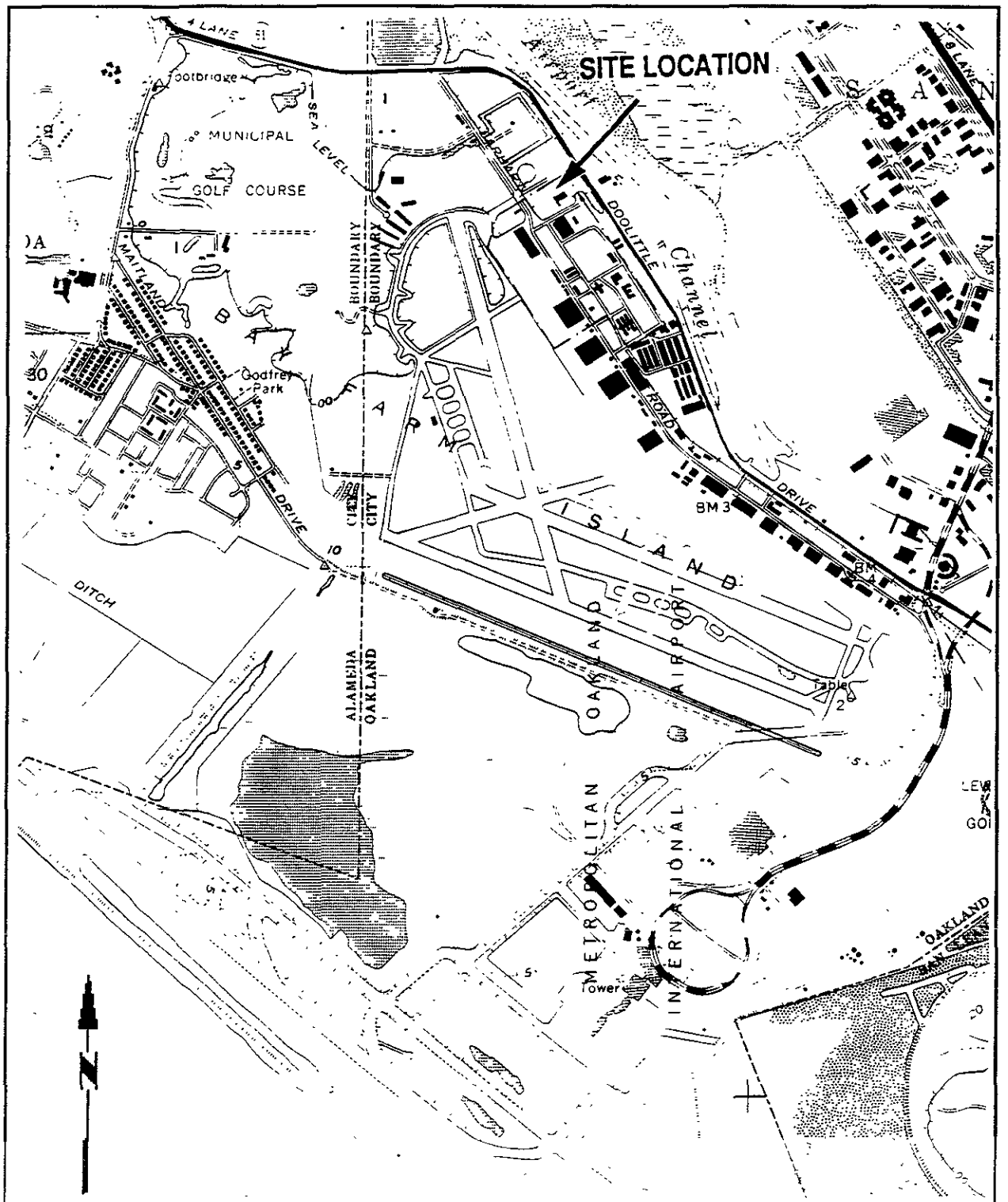
Sincerely,



Sarah J. Battelle, R.G. #4869
Project Manager

Attachments: Figure 1 - Site Location
Figure 2 - Site Plan
Attachment 1 - Water Sample Logs
Attachment 2 - Chain-of-Custody Form
Attachment 3 - Laboratory Analytical Report

cc: Richard Hiett, CRWQCB - Oakland
Charley Chamness, FAA - Los Angeles
Patricia Murphy, Port of Oakland - Environmental Division
ASI File 978849



Scales: 1:24,000 Reference: U S.G.S. San Leandro, Calif. 7 1/2 Minute Topographic Quadrangle Map

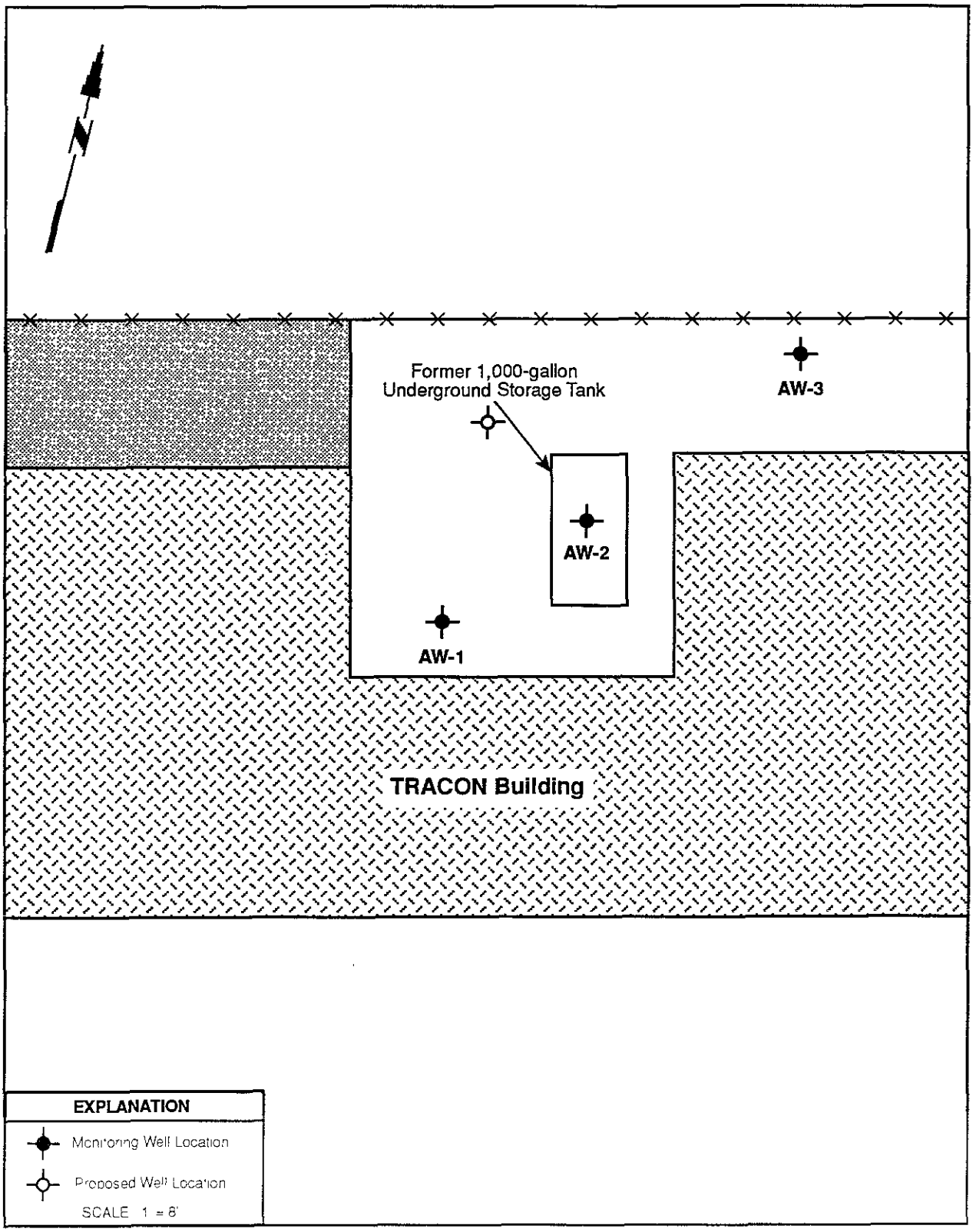
ADVANCED SCIENCES, INC.

Site Location
Federal Aviation Adminstration
Oakland International Airport TRACON Facility
Site Investigation

PROJECT NO. 9788-49

FIGURE 1

m org ch11\oakland fig 1



ADVANCED SCIENCES, INC

Site Plan
Federal Aviation Administration
Oakland TRACON Facility
Site Investigation

PROJECT NO. 9788-49

FIGURE 2

org ch11/tracon fig 2

ATTACHMENT 1

WATER SAMPLE LOGS

WATER SAMPLE LOG

Project Name: FAA Project No. 9788-49 Date: 8/6/92
Well No. AW-1 Location: Oakland TRACON Collected by: JW

Well Purging

Method: PVC Bailer Pump Depth: N/A

Decon. Method: Alconox, DI H2O

Casing volumes to be pured:

2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x ___ gal./ft. x ___ ft. = ___ gal.

Time	W.L. (ft.)	Discharge (~~gpm~~)	pH	Temp.	SC	Notes
9:37	3.53'	/	/	/	/	Pre-purge
9:45	/		7.12	69.5	>20,000	Purge #1
10:15	/		7.63	67.2	>20,000	Purge #2
10:55	/		7.49	67.4	>20,000	Purge #3

Total Discharge: ___ Casing Volumes: 3

Discharge Water Disposal: 55-gallon drums

Well Sampling

Method: Teflon Bailer Pump Depth: 6"

Decon. Method: Disposable

Sample Container	Sample Number
1 liter, Amber, Glass (TPH)	AW-1
40 ml VOAs (2) (BTEX)	

Observations/Notes/Calibration record: ___

WATER SAMPLE LOG

Project Name: FAA Project No. 9788-49 Date: 8-6-92
Well No. AW-2 Location: OAKLAND TRACON Collected by: JW

Well Purging

Method: PVC BAILER Pump Depth: N/A

Decon. Method: ALCONOX, D.I., H_2O

Casing volumes to be pured:

2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x ___ gal./ft. x ___ ft. = ___ gal.

Time	W.L. (ft.)	Discharge (gpm)	pH	Temp.	SC	Notes
9:38	2.92'	✓	✓	✓	✓	PRE PURGE
10:05	✓		7.66	69.3°	15,950	PURGE #1
10:32	✓		7.43	68.5°	14,960	PURGE #2
11:15	✓		7.82	68.3°	14,640	PURGE #3

Total Discharge: ___ Casing Volumes: 3

Discharge Water Disposal: 55-GALLON DRUMS

Well Sampling

Method: TEFLON BAILER Pump Depth: 6"

Decon. Method: DISPOSABLE

Sample Container	Sample Number
1 LITER, AMBER, GLASS (TPH)	AW-2
40 ml VOA's (2) (BETX)	

Observations/Notes/Calibration record: ___

WATER SAMPLE LOG

Project Name: FAA Project No. 9788-49 Date: 8-6-92
Well No. AW-3 Location: OAKLAND - TRACON Collected by: JW

Well Purging

Method: PVC BAILER Pump Depth: N/A

Decon. Method: ALCONOX, D.I., H_2O

Casing volumes to be pured:

2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x ___ gal./ft. x ___ ft. = ___ gal.

Time	W.L. (ft.)	Discharge (gpm)	pH	Temp.	SC	Notes
9:39	3.33'	/	/	/	/	PRE-PURGE
10:15	/		7.21	67.3°	>20,000	PURGE #1
10:40	/		7.66	67.7°	>20,000	PURGE #2
11:35	/		7.45	69.1°	>20,000	PURGE #3

Total Discharge: ___ Casing Volumes: 3

Discharge Water Disposal: 55-GALLON DRUMS

Well Sampling

Method: TEFLON BAILER Pump Depth: 6"

Decon. Method: DISPOSABLE

Sample Container	Sample Number
1 LITER, AMBER, GLASS (TPH)	AW-3
40 ml VOA's (2) (BETX)	

Observations/Notes/Calibration record: ___

ATTACHMENT 2

CHAIN-OF-CUSTODY FORM

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
11631 SEABOARD CIRCLE
STANTON, CA 90680
TEL: (714) 895-5494 • FAX. (714) 894-7501

CHAIN OF CUSTODY RECORD

Date August 6, 1992

Page 1 of 1

LABORATORY CLIENT: Advanced Sciences, Inc.	CLIENT PROJECT NAME / NUMBER: FAA Oakland TRACON / 9788-49
ADDRESS: 4909 Murphy Canyon Rd., Suite 500	PROJECT CONTACT: Jeff Waldman / Search Battelle
CITY: San Diego STATE: CA ZIP: 92123	SAMPLER(S): (SIGNATURE) Jeff Waldman
TEL: (619) 560-8552 FAX: (619) 560-8538	

TURNAROUND TIME[1]

☐ SAME DAY (≤6 HR)[2], 100% ☐ 24 HOURS, 50% ☐ 48 HOURS, 25% ☐ 5 DAYS[3] ☒ 10 DAYS ☐ RUSH WRITTEN REPORT, 10%

1 All turnaround times are based on working hours of 8 a.m. - 5 p.m., M - F. 2, Prior confirmation is strongly recommended 3. 3 days for Tedlar bag air samples.

SPECIAL INSTRUCTIONS/REQUIREMENTS:
Please achieve RWQCB (Tri-Regional) limits of:
TPH (Diesel) = 50 ppb
BTEX = .5 ppb

WRITTEN QC REPORT REQUIRED?

☐ ROUTINE QC ($25) — Spike, Spike Duplicate Results %REC, %RPD Results and Associated Control Limits

☒ RWQCB QC ($50) — NORMAL QC Plus Method blanks Laboratory Control Standards Extraction Logs

SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING DATE	SAMPLING TIME	WATER Comp.	WATER Grab	AIR Intg.	AIR Grab	SOLID/ SOIL	NO. OF Containrs	ANALYSES REQUIRED
AW-1		8/6/92	1145		X				3	TPH (Diesel) - BTEX
AW-2		8/6/92	1205		X				3	
AW-3		8/6/92	1215		X				3	

Relinquished by: (Signature) Jeff Waldman, ASI	Received by: (Signature)	Date: 8/6/92	Time: 1300
Relinquished by (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Received for Laboratory by: (Signature)	Date: 8/07/92	Time: 10:30am

Unless otherwise requested, all samples will be disposed of 30 days after receipt.

DISTRIBUTION: White with report, Yellow to CEL, Pink to Client

ATTACHMENT 3

LABORATORY ANALYTICAL REPORT

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Advanced Sciences, Inc.		Date Sampled:	08/06/92
4909 Murphy Canyon Road, Suite 500		Date Received:	08/07/92
San Diego, CA 92123		Date Extracted:	08/11/92
		Date Analyzed:	08/11/92
		Work Order No.:	92-08-065
Attn: Jeff Waldman			
RE: FAA Oakland Tracon/9788-49		Method:	EPA 8015M

All total petroleum hydrocarbon concentrations are reported in mg/L (ppm) using diesel fuel as a standard.

Sample Number	Concentration	Det'n Limit
AW-1	ND	0.05
AW-2	ND	0.05
AW-3	ND	0.05
Method Blank	ND	0.05

Sample Number	Conc. Added	Conc. Rec.	%D
Control Standard	40.0	40.9	2.2

Reviewed and Approved _____ on 08/18/1992.
William H. Christensen
Laboratory Operations
Manager

EPA 8015M is conducted in accordance with the DHS Method for Total Petroleum Hydrocarbons.

ND denotes not detected at indicated detection limit.

Each sample was received by CEL in a chilled state, intact and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Advanced Sciences, Inc.	Date Sampled: 08/06/92
4909 Murphy Canyon Road, Suite 500	Date Received: 08/07/92
San Diego, CA 92123	Date Extracted: P/T
	Date Analyzed: 08/10/92
	Work Order No.: 92-08-065
	Page 1 of 2
Attn: Jeff Waldman	
RE: FAA Oakland Tracon/9788-49	Method: EPA 602

All concentrations are reported in ug/L (ppb).

	Concentration	Det'n Limit
Sample Number: AW-1		
Benzene	ND	0.25
Toluene	ND	0.25
Ethylbenzene	ND	0.25
Total Xylenes	ND	0.50
Sample Number: AW-2		
Benzene	ND	0.25
Toluene	ND	0.25
Ethylbenzene	ND	0.25
Total Xylenes	ND	0.50
Sample Number: AW-3		
Benzene	ND	0.25
Toluene	ND	0.25
Ethylbenzene	ND	0.25
Total Xylenes	ND	0.50
Sample Number: Method Blank		
Benzene	ND	0.25
Toluene	ND	0.25
Ethylbenzene	ND	0.25
Total Xylenes	ND	0.50

Caliscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Advanced Sciences, Inc.	Date Sampled: 08/06/92
4909 Murphy Canyon Road, Suite 500	Date Received: 08/07/92
San Diego, CA 92123	Date Extracted: P/T
	Date Analyzed: 08/10/92
	Work Order No.: 92-08-065
	Page 2 of 2
Attn: Jeff Waldman	
RE: FAA Oakland Tracon/9788-49	Method: EPA 602

All concentrations are reported in ug/L (ppb).

	Conc. Added	Conc. Rec.	%D
Sample Number: Control Standard			
Benzene	20	21	4.9
Toluene	20	21	4.9
Ethylbenzene	20	21	4.9
Total Xylenes	60	63	4.9

Reviewed and Approved William H. Christensen on 8/19/1992.

William H. Christensen
Laboratory Operations
Manager

ND denotes not detected at indicated detection limit.

Each sample was received by CEL in a chilled state, intact and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.
Analytical Quality Control Report

Client: **Advanced Sciences, Inc.**
Work Order No.: **92-08-065**
Method: **EPA 8015M (Aqueous) {DHS Method}**
Date(s) Analyzed: **08/11/92**
Page: **1 of 2**

Reviewed by: N Hwang
Date Reviewed: 8/20/92

Matrix Spike and Spike Replicate Results

Analyte	[Sample]	[Spike] Added	[Matrix Spike]	%REC	Replicate [Matrix Spike]	%REC	Control Limit %REC	%RPD	Control Limit %RPD
Total Petroleum Hydrocarbons	ND	40.0	39.3	98	35.4	88	65 - 130	11	0 - 20

Page 1 of 2 notes:
1 All concentration values contained herein are in mg/l (ppm).

Calscience Environmental Laboratories, Inc.
Analytical Quality Control Report

Client: **Advanced Sciences, Inc.**
Work Order No.: **92-08-065**
Method: **EPA 602**
Date(s) Analyzed: **08/11/92**
Page: **2 of 2**

Reviewed by: V. Hwang
Date Reviewed: 8/14/92

Matrix Spike and Spike Replicate Results

Analyte	[Sample]	[Spike] Added	[Matrix Spike]	%REC	Replicate [Matrix Spike]	%REC	Control Limit %REC	%RPD	Control Limit %RPD
Toluene	ND	20	56	280 Note 2	21	105	70 - 130	91 Note 2	0 - 20
Chlorobenzene	ND	20	20	100	21	105	70 - 130	5	0 - 20
Ethylbenzene	ND	20	20	100	21	105	70 - 130	5	0 - 20

Page 2 of 2 notes:
1 All concentration values contained herein are in ug/l (ppb).
2 One out of six recoveries fell out of range. Since previous and subsequent recoveries fell within range, this is considered to be a random occurrence.