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RECD. APR 05 2010

Site Material Sampling Report

Mojave Solar Project

Harper Dry Lake

San Bernardino County, California

Prepared for:

Mojave Solar LLC

Introduction

Mojave Solar, LLC, a Delaware limited liability company (herein "Mojave Solar"), is proposing to construct, own and operate the Mojave Solar Project (herein "Project"). The Project is a concentrating solar electric generating facility proposed on an approximately 1,765-acre site near Harper Dry Lake in San Bernardino County, California.

Sampling Requirements

As part of the "Application for Certification" process for the Project and at the request of the California Energy Commission (CEC), Mojave Solar performed a site sampling analysis of large, fallow agricultural fields and the existing, abandoned structures on the project site. These structures included various wood and concrete buildings, previous underground tank locations, and existing and abandoned well sites.

The sampling and testing was outlined in the MSP Soil Sampling Plan approved by the CEC prior to the commencement of onsite sampling procedures.

Sampling Procedures

Field sampling was performed on March 1st and 2nd, 2010. Sampling was performed under the direction of state certified personnel at the site. Field sampling, testing, and observations were performed and material samples were obtained for further laboratory analysis. Soil samples for pesticide and herbicide analysis were collected in the locations identified on the plan map and composited for analysis.

These samples were transported from the field to the certified lab location following standard sampling and testing procedures. Chain of Custody information for these samples is included with this report. Results of the field testing and observations are detailed on the "Field Asbestos and Lead Sampling Notes" included in this report.

Laboratory Sampling Results

The results of the laboratory testing of field samples from the site are attached to this report. Site maps of the existing structures and testing locations are included for reference to the laboratory data sheets. The assessor parcel numbers (APNs) for the testing locations are outlined on the original sampling plan proposal.

Conclusions and Recommendations

The results of the field and laboratory analysis of the site samples are included in this report. While many samples came back as non-detectable, there were samples indicating the presence of asbestos containing materials (ACM), lead based paint (LBP), and hydrocarbon residue from previous underground fuel storage tanks located on the site.

Sampling for pesticides and herbicides in the fallow agricultural areas indicated non-detectable results for pesticide and herbicide residue. Previous conversations with the county agricultural commissioner had indicated that the county did not expect any residues to be found due to the short half-life of normal chemicals used for this purpose. A pesticide sampling analysis provided by the sampling and testing agency is included in this report.

As a follow-up, the following work should be completed prior to any demolition activities occurring on the site:

- All asbestos containing material ("ACM") has to be abated. Under Federal law, ACM is defined as material comprised of greater than 1% asbestos if it is or has the potential to become friable. Friable is defined as material that can be crumbled by hand pressure and releasing asbestos fibers, or asbestos fiber release is from mechanical means (i.e., "hard" demo).
- The lead-based paint ("LBP") has to be properly managed. This can be done as a simple removal (e.g., door and door/window frames), or more detailed (i.e., exterior paint on former General Store). Upon demolition of this building some LBP will be released to the ground. The soil should be sampled to ensure it does not become impacted above regulatory action limits. This type of removal would be less expensive than LBP removal prior to demolition.
- The general store's former fueling system should be investigated, as well as the former aviation fuel ("AV") tank on the northern side of the building. Mitigation procedures should be interfaced with the appropriate governing agencies having jurisdiction over the project site.
- The hazardous materials/wastes located in the General Store's basement and by Building 5 need to be properly managed and disposed/recycled.

An abatement and remediation plan should be developed and instituted to properly dispose of the listed materials at the site. This plan should be prepared and instituted to complete this work in an orderly fashion and prior to the commencement of demolition and construction activities in the affected areas.

**MOJAVE SOLAR PROJECT
SITE SAMPLING PLAN**

Surface Soil Sampling

The anticipated sample locations are shown on the attached Soil Sampling Plan and outlined in the attached soil sampling table. The sample locations were selected to give reasonable spatial coverage of the project site area. If present, soil contamination in the previously disturbed fallow agricultural areas is anticipated to be relatively shallow. Consequently, the focus of the proposed investigation for these areas is shallow soil.

Soil samples for the fallow agriculture areas (labeled 1 through 12) will be collected from each quarter of the quarter sections at a depth of 0 to 8 inches. These surface samples will be collected using a trowel or appropriate hand equipment. The fallow agriculture samples will be consolidated and submitted for laboratory analysis of possible pesticide and/or herbicide residue per USEPA 8081A & USEPA 8151A

Soil samples for the Phase I areas (labeled A through J) will be collected from the locations identified in the Phase I Environmental Site Assessment as showing evidence of surface staining from previous commercial and agricultural uses and locations of existing structures.

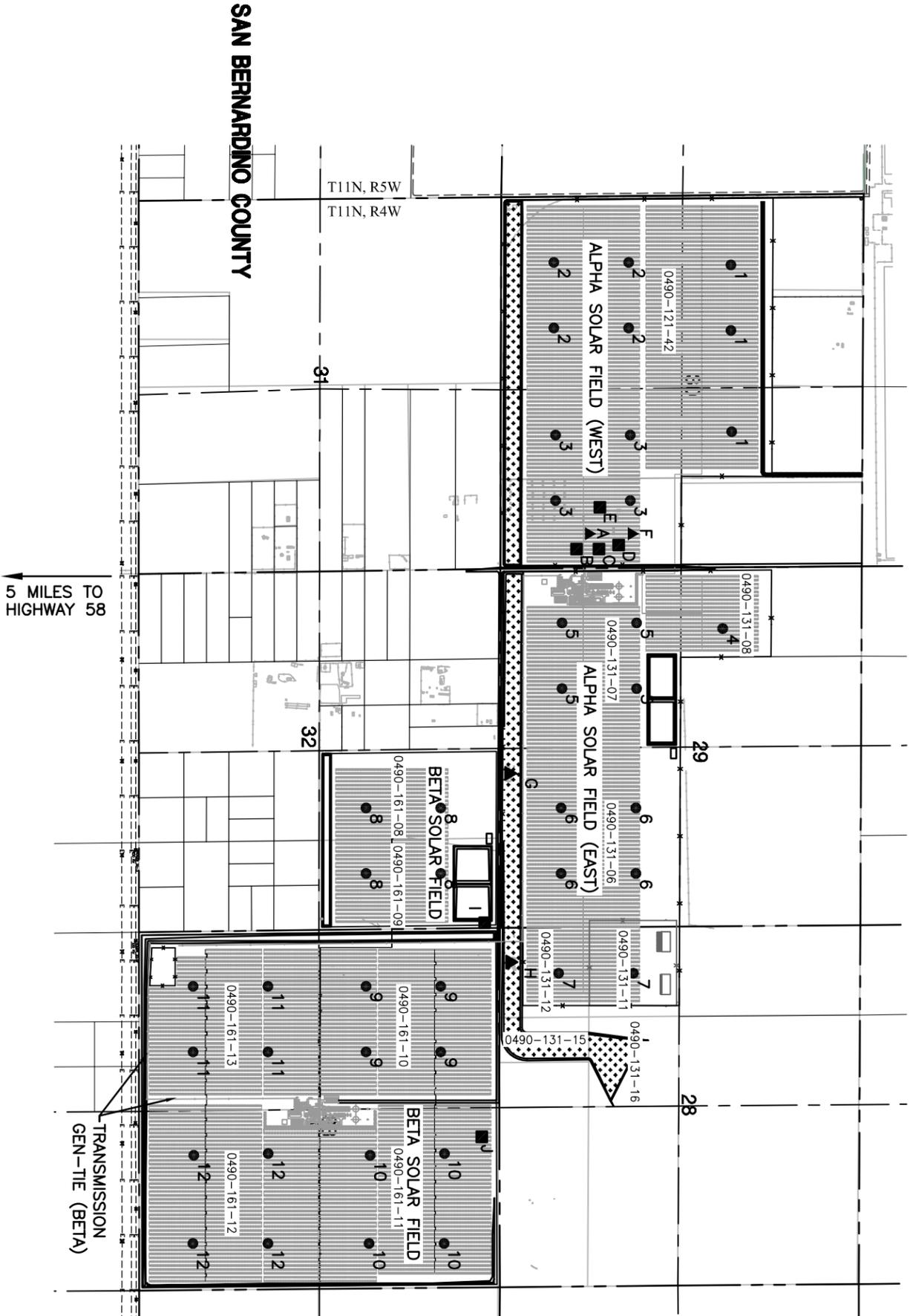
Two soil samples will be collected from each location showing evidence of surface staining, a surface sample at 0 to 4 inches and a deeper sample at 20 to 24 inches. The surface sample will be collected using a trowel or appropriate hand equipment. The deeper sample will be collected using a hand auger or other appropriate equipment as necessary. These samples will be submitted for laboratory analysis of possible hydrocarbon residue per USEPA 8015M. Material samples will be collected in the locations of existing structures to test for evidence of lead and asbestos per EPA 6020 & USEPA 600/M4-82-020.

Soil and Material Analysis

The proposed analytical testing parameters and methods for soil and material samples will be performed by an independent, approved laboratory. Soil and material samples will be submitted for a combination of laboratory analysis. Analysis will be determined following consultation with and at the direction of the County of San Bernardino Environmental Health Department and the San Bernardino County Department of Agriculture.

Mojave Solar Project – Soil Sampling Plan			
APN	PHASE I INFORMATION	SAMPLING PLAN	TEST(S)
0490-121-42	Previous Cattle Farming	(1-3) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
	Existing Concrete Structure – Store	(A) – Lead / Asbestos	EPA 6020 / USEPA 600/M4-82-020
	Vent Pipes @ South Store Wall	(B) – Hydrocarbons	USEPA 8015M
	Previous Fuel Islands @ Store Front	(C) – Hydrocarbons	USEPA 8015M
	Previous UG Aviation Fuel Tank – 30' North of Store	(D) – Hydrocarbons	USEPA 8015M
	Previous AG Fuel Tanks – Rear of Store	(E) – Hydrocarbons	USEPA 8015M
	Existing Wood Structures – Various	(F) – Lead / Asbestos	EPA 6020 / USEPA 600/M4-82-020
0490-131-06	Wood Structures @ SW Corner – Vacant Homes	(G) – Lead / Asbestos	EPA 6020 / USEPA 600/M4-82-020
	Vacant – Fallow Agriculture	(6) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-131-07	Vacant – Fallow Agriculture	(5) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-131-08	Vacant – Fallow Agriculture	(4) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-131-11	Vacant – Fallow Agriculture	(7) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-131-12	Wood Structures @ South – Vacant Farm Buildings	(H) – Lead / Asbestos	EPA 6020 / USEPA 600/M4-82-020
		(7) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
<i>0490-131-13</i>	<i>Not Part of Final Project Site</i>	<i>N/A</i>	
0490-131-15	Existing Desert	No Sampling Planned	
0490-131-16	Existing Desert	No Sampling Planned	
0490-161-08	Active Agriculture	(8) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-161-09	Active Agriculture	(8) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
	Active Well @ NE Corner – Ryken Well	(I) – Hydrocarbons	USEPA 8015M
0490-161-10	Vacant – Fallow Agriculture	(9) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-161-11	Vacant – Fallow Agriculture	(10) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
	Active Well @ NW Corner – Wetlands Well	(J) – Hydrocarbons	USEPA 8015M

0490-161-12	Vacant – Fallow Agriculture	(12) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
0490-161-13	Vacant – Fallow Agriculture	(11) – Pesticides / Herbicides	USEPA 8081A / USEPA 8151A
<i>0490-171-09</i>	<i>Not Part of Final Project Site</i>	<i>N/A</i>	



LEGEND

- SAMPLE LOCATION TO BE TESTED FOR PESTICIDES & HERBICIDES
- # SAMPLE LOCATION CONSOLIDATED FOR LAB TESTING
- SAMPLE LOCATION TO BE TESTED FOR HYDROCARBONS
- ▲ SAMPLE LOCATION TO BE TESTED FOR LEAD & ASBESTOS

SAMPLE LOCATIONS

- ▲ EXISTING CONCRETE STRUCTURE - STORE
- VENT PIPES AT SOUTH STORE WALL
- PREVIOUS FUEL ISLANDS AT STORE FRONT
- PREVIOUS UG AVIATION FUEL TANK - 30' NORTH OF STORE
- PREVIOUS AG FUEL TANKS - REAR OF STORE
- ▲ EXISTING WOOD STRUCTURES - VARIOUS
- ▲ WOOD STRUCTURES AT SW CORNER - VACANT HOMES
- ▲ WOOD STRUCTURES AT SOUTH - VACANT FARM BUILDINGS
- ACTIVE WELL AT NE CORNER - RYKEN WELL
- ACTIVE WELL AT NW CORNER - WETLANDS WELL

MOJAVE SOLAR PROJECT

SOIL SAMPLING PLAN



MOJAVE SOLAR LLC



PROJECT:
DATE: 01/18/10

FOLD

FOLD

RESULTS OF SOIL SAMPLING

SAMPLING LOCATIONS



AB1

AB2

AB3

Lockhart Rd
© 2010 Google

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35°00'39.51" N 117°19'12.62" W

elev 2059 ft

Feb 1, 2009

Eye alt 2522 ft

B4

B5

B6

B7

B8

B9

B1

B10



© 2010 Google

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35°00'47.29" N 117°19'52.80" W

elev 2068 ft

Feb 1, 2009

Eye alt 4333 ft



HB4

HB3

HB7

HB6

HB8

HB5

HB2

HB1

HB9



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Google

35°00'39.47" N 117°18'39.31" W

elev 2047 ft

Feb 1, 2009

Eye alt 2446 ft

SAMPLING RESULTS

FIELD ASBESTOS & LEAD SAMPLING NOTES

General Store: 65 asbestos samples

Building	Asbestos ^[1]		Lead - Based Paint ^[2]
1	North exterior roof parapet roof field Mezzanine green 9" square vinyl floor tile (VFT)	Exterior	All walls Door 2 ^[6] South wall, southeastern room
	Ground level and mezzanine brown 9" square VFT Ground level brown 9" square VFT	Interior	interior paints Southern room
	West from B1; pipe coating West from B1; broken 9" VFT in soil Ground level southern room, ceiling insulation Basement; 41 rolls of 6" x 100' tarpaper flashing SW exterior "closet"; pipe insulation Western wall exterior window putty Southern room green 9" VFT	Mezzanine ^[7]	Main floor restrooms, ceramic tiles Room 5, southern window Hallway, just wood sills
2	Drywall joint compound		Northern room, eastern window Northern room, eastern door frame
3	Exterior pipe wrap		
4	Roof mastic Baseboard 9" VFT		Interior west wall (wood)
5	Exterior broken Transite pipe pieces Window putty		
6	Exterior pipe wrap Window putty North exterior wall Transite pipe		North wall North wall, windows 6 - 10 ^[3] South wall South wall, window 7 ^[3] South wall, doors 2 - 4 ^[4] Room 5, door ^[5]
7	Roof mastic Eastern exterior tan VFT in debris pile		West wall North wall West wall, northern window Room 1, 2, 3, 4, door jamb ^[4, 5] Room 2, 3, 4, 6, 7, window ^[3, 5]
		Southern wall	Room 7, 6, 5, 4, 3, 1, window Room 7, 5, 3, bath window Room 1, interior closet
8	None		Eastern Door All exterior walls Southern window Interior eastern wall cabinets
		Northern wall	
9	None		
10	Drywall joint compound		

NOTES

- 1 Fuel leak at former fuel dispenser island; entire piping should be investigated per County Fire regulations
- 1 Fuel leak at former northern AV gas tank
- 1 Transite piece exterior southwest corner
- 1 Transite pieces exterior southwest corner
- 1 Drum storage in basement
- 1 West from building; two stage clarifier
- 1 Potential for lead solder in 4" cast iron pipe joints
- 1 Elevator brake shoes likely asbestos
- All Fluorescent light ballasts need to be inspected for PCBs
- 5 South exterior waste grease and oil drums
- 6 Herbicide bag inside building
- 8 West from building; potential former hydraulic lifts with hydrocarbon building-up
- HB5 Potential former Mechanic's Pit in garage

[1] = analyzed to contain greater than 1% asbestos that is or may become friable during demolition

[2] = greater than 1.0 mg/cm² as measured with an XRF

[3] = Wall windows numbered sequentially from west to east

[4] = Door and/or door jambs numbered sequentially from west to east

[5] = Rooms numbered sequentially from west to east

[6] = Western walls doors numbered sequentially from north to south

[7] = General store's mezzanine rooms numbered sequentially from north to south

PRIMARY SAMPLING RESULTS



Alpha Scientific Corporation
Environmental Laboratories

03-10-2010

Mr. Glenn Stillman
Alaska Petroleum Environmental Engineering
P.O. Box 5365
Garden Grove, CA 92846-0365

Project: 40100
Project Site: Mojave Solar LLC
Sample Date: 03-01-2010
Lab Job No.: AD003012

Dear Mr. Stillman:

Enclosed please find the analytical report for the sample(s) received by Alpha Scientific Corporation on 03-04-2010 and analyzed by the following EPA methods:

EPA 8015M (Total Petroleum Hydrocarbons)
EPA 8260B (BTEX & Oxygenates by GC/MS)
EPA 6010B/7471A for CAM Metals
EPA 8081A (Organochlorine Pesticides)
EPA 8082 (PCBs)
EPA 8151A (Chlorinated Herbicides)

EPA 8151A analyses were subcontracted to ABC Environmental Laboratories (ELAP # 2584).

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Alpha Scientific Corporation is a CA DHS certified laboratory (Certificate Number 2633). Thank you for giving us the opportunity to serve you. Please feel free to call me at (562) 809-8880 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.



Alpha Scientific Corporation

Environmental Laboratories

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Project Site: Mojave Solar LLC
Matrix: Soil
Batch No. for TPH-g: BMC04-GS1
Batch No. for TPH-d: BC04-DS1

Lab Job No.: AD003012
Date Sampled: 03-01-2010
Date Received: 03-04-2010
Date Analyzed: 03-04-2010
Date Analyzed: 03-04-2010
Date Reported: 03-10-2010

EPA 8015M (Total Petroleum Hydrocarbons)

Reporting Unit: mg/kg (ppm)

Sample ID	Lab ID	Gasoline Range (C4-C12)*	Diesel Range (C13-C23)	Oil Range (C24-C40)
MDL		0.2	1	25
PQL		0.5	5	50
Method Blank		ND	ND	ND
B1-1	AD003012-1	ND	ND	ND
B1-2	AD003012-2	ND	ND	ND
B1-3	AD003012-3	1,310	3,510	124
B2-1	AD003012-4	NA	ND	ND
B2-2	AD003012-5	NA	ND	ND
B3-1	AD003012-6	NA	ND	ND
B3-2	AD003012-7	NA	ND	ND
B4-1	AD003012-8	NA	52.7	440
B4-2	AD003012-9	NA	ND	ND
B5-1	AD003012-10	NA	8,040	17,700
B5-2	AD003012-11	NA	27.0	136
BLD9	AD003012-14	NA	3,620	25,600

* Gasoline Range TPH result is obtained from purge and trap analysis.

MDL: Method Detection Limit;

PQL: Practical Quantitation Limit.

ND: Not Detected (at the specified limit).

J: Trace value.

NA: Not Analyzed



Alpha Scientific Corporation

Environmental Laboratories

03-10-2010

Client: Alaska Petroleum Environmental Engineering
 Project: 40100
 Project Site: Mojave Solar LLC
 Matrix: Soil
 Batch No: 0304-VOBS1

Lab Job No.: AD003012
 Date Sampled: 03-01-2010
 Date Received: 03-04-2010
 Date Analyzed: 03-04-2010

EPA 8260B (BTEX & Oxygenates by GC/MS)
Reporting Units: mg/kg (ppm)

Lab ID	Method	AD003012-3					MDL	PQL
Sample ID	Blank	B1-3						
DF	1	100						
Benzene	ND	ND					0.001	0.002
Toluene	ND	ND					0.001	0.002
Ethylbenzene	ND	3.58					0.001	0.002
Total Xylenes	ND	34.8*					0.002	0.004
Ethanol	ND	ND					0.50	1.00
MTBE	ND	ND					0.002	0.005
ETBE	ND	ND					0.002	0.005
DIPE	ND	ND					0.002	0.005
TAME	ND	ND					0.002	0.005
TBA	ND	ND					0.002	0.005

MDL=Method Detection Limit; PQL=Practical Quantitation Limit; DF=Dilution Factor;
 ND=Not Detected (below DF × MDL); * Obtained from higher dilution.
 J=Trace value: result is lower than DF × PQL but higher than DF × MDL.



Alpha Scientific Corporation

Environmental Laboratories

Client: Alaska Petroleum Environmental Engineering
 Project: 40100
 Project Site: Mojave Solar LLC
 Matrix: Soil
 Digestion Method: EPA 3050B
 Batch No. for 6010B: 0305-MS1
 Batch No. for Hg: 0305-HgS1

Lab Job No.: AD003012
 Date Sampled: 03-01-2010
 Date Received: 03-04-2010
 Date Digested: 03-04-2010
 Date Analyzed: 03-05-2010
 Date Analyzed: 03-05-2010
 Date Reported: 03-10-2010

EPA 6010B/7471A for Cam Metals (TTLC)

Reporting Units: mg/kg (ppm)

Element	EPA	Method Blank	AD003012-13	AD003012-14			PQL
	Method		Slag	BLD9			
Antimony (Sb)	6010B	ND	ND	ND			2
Arsenic (As)	6010B	ND	ND	2.2			0.5
Barium (Ba)	6010B	ND	74.2	32.1			2
Beryllium (Be)	6010B	ND	ND	ND			2
Cadmium (Cd)	6010B	ND	ND	ND			2
Chromium (Cr)	6010B	ND	13.1	7.0			2
Cobalt (Co)	6010B	ND	13.8	ND			2
Copper (Cu)	6010B	ND	15.7	15.8			2
Lead (Pb)	6010B	ND	5.8	45.9			2
Mercury (Hg)	7471A	ND	ND	ND			0.05
Molybdenum (Mo)	6010B	ND	ND	2.0			2
Nickel (Ni)	6010B	ND	25.9	5.3			2
Selenium (Se)	6010B	ND	ND	ND			0.5
Silver (Ag)	6010B	ND	ND	40.2			2
Thallium (Tl)	6010B	ND	ND	ND			2
Vanadium (V)	6010B	ND	127	21.4			2
Zinc (Zn)	6010B	ND	52.3	123			1

PQL: Practical Quantitation Limit.
 ND: Not Detected (at the specified limit).



Alpha Scientific Corporation

Environmental Laboratories

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Project Site: Mojave Solar LLC
Matrix: Soil
Prep. Method: EPA 3550B
Batch No. CC05-PS1

Lab Job No.: AD003012
Date Sampled: 03-01-2010
Date Received: 03-04-2010
Date Prepared: 03-04-2010
Date Analyzed: 03-05-2010
Date Reported: 03-10-2010

EPA 8081A (Organochlorine Pesticides)

Reporting Unit: $\mu\text{g}/\text{kg}$ (ppb)

LAB SAMPLE I.D.			MB	AD003012-12			
CLIENT SAMPLE I.D.				AG-1			
DILUTION FACTOR							
COMPOUND	MDL	PQL					
Alpha-BHC	3	5	ND	ND			
Gamma-BHC (Lindane)	3	5	ND	ND			
Heptachlor	3	5	ND	ND			
Aldrin	3	5	ND	ND			
Betta-BHC	3	5	ND	ND			
Delta-BHC	3	5	ND	ND			
Heptachlor Epoxide	3	5	ND	ND			
Endosulfan I	3	5	ND	ND			
4,4'-DDE	3	5	ND	ND			
Dieldrin	3	5	ND	ND			
Endrin	3	5	ND	ND			
4,4'-DDD	3	5	ND	ND			
Endosulfan II	3	5	ND	ND			
4,4'-DDT	3	5	ND	ND			
Endrin Aldehyde	3	5	ND	ND			
Endosulfan Sulfate	3	5	ND	ND			
Methoxychlor	3	5	ND	ND			
Chlordane	15	25	ND	ND			
Toxaphene	60	100	ND	ND			

MDL=Method Detection Limit; PQL=Practical Quantitation Limit; MB=Method Blank;
ND=Not Detected (below $\text{DF} \times \text{MDL}$).
J=Result is between $\text{DF} \times \text{MDL}$ and $\text{DF} \times \text{PQL}$; * Obtained from a higher dilution analysis.



Alpha Scientific Corporation

Environmental Laboratories

03-10-2010

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Project Site: Mojave Solar LLC
Matrix: Soil
Extraction Method: EPA 3550B
Batch No. CC08-PS1

Lab Job No.: AD003012
Date Sampled: 03-01-2010
Date Received: 03-04-2010
Date Extracted: 03-04-2010
Date Analyzed: 03-08-2010

EPA 8082 (PCB's)
Reporting Unit: µg/kg (ppb)

Sample ID	Lab ID	DF	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Method Detect. Limit (MDL)			50	100	50	50	50	50	50
Method Blank		1	ND						
BLD9	AD003012-14	1	ND						

MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected (below DF × MDL)



03-10-2010

**TPH-Gasoline
Batch QA/QC Report**

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Matrix: Soil
Batch No: BMC04-GS1

Lab Job No.: AD003012
Lab Sample ID: Q003011-1
Date Analyzed: 03-04-2010

**I. MS/MSD Report
Unit: ppb**

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1,000	1,180	1,250	118.0	125.0	5.8	30	70-130

**II. LCS Result
Unit: ppb**

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
TPH-g	842	1,000	84.2	80-120

ND: Not Detected (at the specified limit).



03-10-2010

**EPA 8015M (TPH)
Batch QA/QC Report**

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Matrix: Soil
Batch No. for TPH-d: BC04-DS1

Lab Job No.: AD003012
Lab Sample ID: AD003012-1
Date Analyzed: 03-04-2010

**I. MS/MSD Report
Unit: ppm**

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-D	ND	200	218	219	109.0	109.5	0.5	30	70-130

**II. LCS Result
Unit: ppm**

Analyte	LCS Report Value	True Value	Rec.%	%Rec Accept. Limit
TPH-D	217	200	108.5	80-120

ND: Not Detected (at the specified limit).



03-10-2010

**EPA 8260B
Batch QA/QC Report**

Client:	Alaska Petroleum Environmental Engineering	Lab Job No.:	AD003012
Project:	40100		
Matrix:	Soil	Lab Sample ID:	Q003011-1
Batch No:	0304-VOBS1	Date Analyzed:	03-04-2010

**I. MS/MSD Report
Unit: ppb**

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	22.6	22.6	113.0	113.0	0	30	70-130
Benzene	ND	20	19.9	21.2	99.5	106.0	6.3	30	70-130
Trichloro-ethene	ND	20	21.7	19.4	108.5	97.0	11.2	30	70-130
Toluene	ND	20	21.8	17.6	109.0	88.0	21.3	30	70-130
Chlorobenzene	ND	20	17.8	19.4	89.0	97.0	8.6	30	70-130

**II. LCS Result
Unit: ppb**

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	20.9	20.0	104.5	80-120
Benzene	23.2	20.0	116.0	80-120
Trichloro-ethene	18.6	20.0	93.0	80-120
Toluene	23.0	20.0	115.0	80-120
Chlorobenzene	22.2	20.0	111.0	80-120

ND: Not Detected (at the specified limit).



03-10-2010

**EPA 6010B/7471A for Cam Metals (TTLC)
Batch QA/QC Report**

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Matrix: Soil
Batch No. for 6010B: 0305-MS1
Batch No. for Hg: 0305-HgS1

Lab Job No.: AD003012
Lab Sample ID: LCS
Date Analyzed: 03-05-2010
Date Analyzed: 03-05-2010

LCS/LCSD Report

Analyte	EPA Method	MB Conc.	LCS %Rec.	LCSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
Antimony (Sb)	6010B	ND	100.6	96.2	4.5	20	80-120
Arsenic (As)	6010B	ND	102.1	100.9	1.2	20	80-120
Barium (Ba)	6010B	ND	100.3	101.6	1.3	20	80-120
Beryllium (Be)	6010B	ND	98.4	98.7	0.3	20	80-120
Cadmium (Cd)	6010B	ND	96.9	98.3	1.4	20	80-120
Chromium (Cr)	6010B	ND	102.3	102.2	0.1	20	80-120
Cobalt (Co)	6010B	ND	98.4	100.5	2.1	20	80-120
Copper (Cu)	6010B	ND	102.3	100.7	1.6	20	80-120
Lead (Pb)	6010B	ND	98.2	98.2	0.0	20	80-120
Mercury (Hg)	7471A	ND	104.0	99.4	4.5	20	80-120
Molybdenum (Mo)	6010B	ND	97.8	97.1	0.7	20	80-120
Nickel (Ni)	6010B	ND	97.4	99.7	2.3	20	80-120
Selenium (Se)	6010B	ND	101.4	96.9	4.5	20	80-120
Silver (Ag)	6010B	ND	117.6	117.7	0.1	20	80-120
Thallium (Tl)	6010B	ND	98.5	107.3	8.6	20	80-120
Vanadium (V)	6010B	ND	93.5	93.2	0.3	20	80-120
Zinc (Zn)	6010B	ND	108.3	109.4	1.0	20	80-120

ND: Not Detected.



03-10-2010

**EPA 8081A (Pesticides)
Batch QA/QC Report**

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Matrix: Soil
Batch No. CC05-PS1

Lab Job No.: AD003012
Lab Sample ID: AD003012-12
Date Analyzed: 03-05-2010

I. MS/MSD Report
Unit: ppb

Analyte	Method Blank	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
Gamma-BHC	ND	20	18.3	16.2	91.5	81.0	12.2	30	46-127
Heptachlor	ND	20	18.5	16.7	92.5	83.5	10.2	30	31-134
Aldrin	ND	20	20.3	18.8	101.5	94.0	7.7	30	36-132
Dieldrin	ND	20	19.5	19.6	97.5	98.0	0.5	30	21-134
Endrin	ND	20	19.2	16.6	96.0	83.0	14.5	30	42-139
4,4'-DDT	ND	20	18.3	16.4	91.5	82.0	11.0	30	21-134

II. LCS Result
Unit: ppb

Analyte	LCS Report Value	True Value	Rec.%	Accept. Limit
Gamma-BHC	16.0	20	80.0	80-120
Heptachlor	16.2	20	81.0	80-120
Aldrin	18.4	20	92.0	80-120
Dieldrin	18.9	20	94.5	80-120
Endrin	16.0	20	80.0	80-120
4,4'-DDT	16.0	20	80.0	80-120

ND: Not Detected.



Alpha Scientific Corporation
Environmental Laboratories

03-10-2010

EPA 8082
Batch QA/QC Report

Client: Alaska Petroleum Environmental Engineering
Project: 40100
Matrix: Soil
Batch No. CC08-PS1

Lab Job No.: AD003012
Lab Sample ID: LCS
Date Analyzed: 03-08-2010

LCS/LCSD Report
Unit: ppb

Analyte	Method Blank	Spike Conc.	LCS	LCSD	LCS %Rec.	LCSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1016	ND	500	483	513	96.6	102.6	6.0	30	46-127
1260	ND	500	467	495	93.4	99.0	5.8	30	31-134

ND: Not Detected (at the specified limit).

ASBESTOS SAMPLING RESULTS



AmeriSci Los Angeles

24416 SOUTH MAIN STREET • SUITE 308
CARSON, CA 90745
TEL: (310) 834-4868 • FAX: (310) 834-4772

March 11, 2010

Alaska Petroleum Engineering
Attn: Karen Ernst
P.O. Box 5365
Garden Grove, CA 92846-0365

RECEIVED

MAR 18 2010

A.P.E.E.

RE: Alaska Petroleum Engineering
Job Number 910031148
P.O. #40100
40100; Mojave Solar LLC

Dear Karen Ernst:

Enclosed are the results for polarized light microscopy analysis (PLM) of the following Alaska Petroleum Engineering samples received at AmeriSci on Monday, March 08, 2010, for a 3 day turnaround:

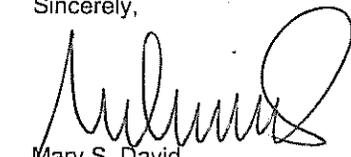
Sample ID B1NR1 through B10WP

The 102 samples contained in Ziplock Bags were shipped to AmeriSci via Federal Express 8559 6661 1710. These samples were prepared and analyzed according to the EPA Interim Method (EPA 600/M4-82-020 per 40 CFR 763, subpt F, App. A). The samples were evaluated for homogeneity by low power stereomicroscopy. Asbestos fibers were identified by PLM and dispersion staining through the determination of the required optical properties including: morphology, color, pleochroism, refractive indices, birefringence, extinction and sign of elongation. The required analytical information, analysis results, analyst signature and laboratory identification is contained in the Analyst's Report.

This report relates ONLY to the sample analysis expressed as percent asbestos. The CV for this analysis is expected to range from 0.3 to 1.2, depending on the quantity of analyte present. AmeriSci assumes no responsibility for customer supplied data such as "sample type", "location", or "area sampled". This report must not be used to claim product endorsement by AmeriSci, NVLAP or any agency of the U. S. Government. The National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced, except in full without the written approval of the laboratory. This report may contain specific data not covered by NVLAP or ELAP accreditations respectively, if so identified in relevant footnotes.

AmeriSci appreciates this opportunity to serve your organization. Please contact us for any further assistance or with any questions.

Sincerely,



Mary S. David
Client Services Manager



AmeriSci Los Angeles

24416 S. Main Street, Ste 308
 Carson, California 90745
 TEL: (310) 834-4868 • FAX: (310) 834-4772

PLM Bulk Asbestos Report

Alaska Petroleum Engineering
 Attn: Karen Ernst
 P.O. Box 5365

Date Received 03/08/10
 Date Examined 03/10/10

AmeriSci Job # 910031148
 P.O. #
 Page 1 of 23

RE: 40100; Mojave Solar LLC

Garden Grove, CA 92846-0365

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1NR1 Location: North Roof Parapit, Roofing Felt Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Chrysotile 8.0 % Other Material: Non-fibrous 92 %	910031148-01	Yes	8 % (by CVES) by Paola Ducoing on 03/10/10
B2EXST Location: Bldg. 2 Exterior Stucco Analyst Description: Green, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Finish Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-02.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B2EXST Location: Bldg. 2 Exterior Stucco Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %	910031148-02.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1SWI Location: Bldg. 2 South Wall Stucco Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Finish Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-03.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1SWI Location: Bldg. 2 South Wall Stucco Analyst Description: Tan, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Base Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-03.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1CMR2 Location: Bldg. 1 Center Mezzanine Roof 2 VFT Analyst Description: Green, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %	910031148-04L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
B1CMR2 Location: Bldg. 1 Center Mezzanine Roof 2 VFT Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-04L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CFT Location: Bldg. 1 Center 9" VFT Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %	910031148-05L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
B1CFT Location: Bldg. 1 Center 9" VFT Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-05L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CR2ACT Location: Bldg. 1 Mezzanine Room 2 2'x4' ACT Analyst Description: White/Brown, Homogeneous, Fibrous, Ceiling Tile Asbestos Types: Other Material: Cellulose 65 %, Non-fibrous 35 %	910031148-06	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CEIL Location: Bldg. 1 Center Ceiling Stucco Analyst Description: White/Brown, Homogeneous, Fibrous, Drywall Asbestos Types: Other Material: Cellulose 15 %, Non-fibrous 85 %	910031148-07.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1CEIL Location: Bldg. 1 Center Ceiling Stucco Analyst Description: Light Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %	910031148-07.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CEIL Location: Bldg. 1 Center Ceiling Stucco Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-07L3	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1SWST Location: Bldg. 1 SW Corner Roof Stucco Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %	910031148-08	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CSTR Location: Bldg. 1 Stair Treads Analyst Description: Brown, Homogeneous, Fibrous, Tread Asbestos Types: Other Material: Cellulose 20 %, Non-fibrous 80 %	910031148-09L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CSTR Location: Bldg. 1 Stair Treads Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-09L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1NWFT Location: Bldg. 1 North West Roof VFT Analyst Description: Brown, Homogeneous, Non-Fibrous, Flooring Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %	910031148-10L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1NWFT Location: Bldg. 1 North West Roof VFT Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-10L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
HB7VFT Location: VFT Analyst Description: Brown/Grey, Homogeneous, Non-Fibrous, Flooring Asbestos Types: Other Material: Non-fibrous 100 %	910031148-11	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8WP Location: Bldg. 8 Window Putty Analyst Description: Beige, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Other Material: Non-fibrous 100 %	910031148-12	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8INCSC Location: Bldg. 8 Interior Skim Coat Analyst Description: Grey, Homogeneous, Non-Fibrous, Skim Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-13	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8FT2 Location: Bldg. 8 Beige VFT w/Black Mastic Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Other Material: Non-fibrous 100 %	910031148-14L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8FT2 Location: Bldg. 8 Beige VFT w/Black Mastic Analyst Description: Black/Yellow, Heterogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-14L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B8FT Location: Bldg. 8 Beige VFT w/Yellow Mastic Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Other Material: Non-fibrous 100 %	910031148-15L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8FT Location: Bldg. 8 Beige VFT w/Yellow Mastic Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-15L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8DWC Location: Bldg. 8 Drywall Compound Analyst Description: White, Homogeneous, Non-Fibrous, Joint Compound Asbestos Types: Other Material: Non-fibrous 100 %	910031148-16	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8INTST Location: Bldg. 8 Interior Stucco Analyst Description: Off-White, Homogeneous, Fibrous, Stucco Asbestos Types: Other Material: Cellulose 10 %, Non-fibrous 90 %	910031148-17	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8ROOF Location: Bldg. 8 Roof Field Analyst Description: Black/White, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 25 %, Fibrous glass 15 %, Non-fibrous 60 %	910031148-18	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B8EXST Location: Bldg. 8 Exterior Stucco Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %	910031148-19	No	NAD (by CVES) by Paola Ducoing on 03/10/10

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1DEBRIS Location: Bldg. 1 Debris Field Shingle Analyst Description: Black/Green, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 30 %, Fibrous glass 15 %, Non-fibrous 55 %	910031148-20	No	NAD (by CVES) by Paola Ducoing on 03/10/10
PC Location: North Of B1 Pipe Coating Analyst Description: Black, Homogeneous, Fibrous, Pipe Wrap Asbestos Types: Chrysotile 30.0 % Other Material: Non-fibrous 70 %	910031148-21	Yes	30 % (by CVES) by Paola Ducoing on 03/10/10
B1R1 Location: Bldg. 1 Main Roof Field Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 35 %, Fibrous glass 10 %, Non-fibrous 55 %	910031148-22	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1WW1 Location: Bldg. 1 West Wall Stucco Analyst Description: White, Homogeneous, Non-Fibrous, Stucco-Skim Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-23.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1WW1 Location: Bldg. 1 West Wall Stucco Analyst Description: Tan, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Base Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-23.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1WW1 Location: Bldg. 1 West Wall Stucco Analyst Description: White/Brown, Homogeneous, Fibrous, Drywall Asbestos Types: Other Material: Cellulose 15 %, Non-fibrous 85 %	910031148-23.3	No	NAD (by CVES) by Paola Ducoing on 03/10/10

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1CBB Location: Bldg. 1 Mezzanine Baseboard w/Yellow Mastic Analyst Description: Black, Homogeneous, Non-Fibrous, Baseboard Asbestos Types: Other Material: Non-fibrous 100 %	910031148-24L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1CBB Location: Bldg. 1 Mezzanine Baseboard w/Yellow Mastic Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-24L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
FT3 Location: North Of Bldg. 1 Debris Field 9" VFT Analyst Description: Black, Homogeneous, Non-Fibrous, Flooring Asbestos Types: Other Material: Non-fibrous 100 %	910031148-25	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1ACT Location: Bldg. 1 12" ACT w/Brown Mastic Bottom Analyst Description: White/Brown, Homogeneous, Fibrous, Ceiling Tile Asbestos Types: Other Material: Cellulose 90 %, Non-fibrous 10 %	910031148-26L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1ACT Location: Bldg. 1 12" ACT w/Brown Mastic Bottom Analyst Description: Light Grey, Heterogeneous, Non-Fibrous, Cementitious, Plaster Asbestos Types: Other Material: Non-fibrous 100 %	910031148-26L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1ACT Location: Bldg. 1 12" ACT w/Brown Mastic Bottom Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-26L3	No	NAD (by CVES) by Paola Ducoing on 03/10/10

See Reporting notes on last page

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FT2-Green Location: North Of Bldg. 1 Debris Field 9" Green VFT Analyst Description: Green, Homogeneous, Non-Fibrous, Flooring Asbestos Types: Other Material: Non-fibrous 100 %	910031148-27L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
FT2-Green Location: North Of Bldg. 1 Debris Field 9" Green VFT Analyst Description: Beige/Grey, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-27L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
FT2-White Location: North Of Bldg. 1 Debris Field 9" White VFT w/Black Mastic Analyst Description: White, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 3.0 % Other Material: Non-fibrous 97 %	910031148-28L1	Yes	3 % (by CVES) by Paola Ducoing on 03/10/10
FT2-White Location: North Of Bldg. 1 Debris Field 9" White VFT w/Black Mastic Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-28L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1NW1 Location: Bldg. 1 North Wall Stucco Analyst Description: White, Homogeneous, Non-Fibrous, Stucco-Finish Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-29.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1NW1 Location: Bldg. 1 North Wall Stucco Analyst Description: Light Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Base Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-29.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
HB2ROOF Location: 3 Layer & Tape Paper	910031148-30	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing			
Asbestos Types:			
Other Material: Cellulose 65 %, Non-fibrous 35 %			
HB2RM Location: Roof Mastic	910031148-31	Yes	5 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/Silver, Homogeneous, Non-Fibrous, Roofing Mastic			
Asbestos Types: Chrysotile 5.0 %			
Other Material: Non-fibrous 95 %			
HB4ROOF Location: Pole Barn Shed	910031148-32	Yes	6 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing			
Asbestos Types: Chrysotile 6.0 %			
Other Material: Cellulose 10 %, Fibrous glass 14 %, Non-fibrous 70 %			
HB2ROOF2 Location: Roof Of Water Heater Room (Exterior)	910031148-33	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing			
Asbestos Types:			
Other Material: Cellulose 45 %, Non-fibrous 55 %			
HB5ROOF Location: *Do Not Analyze	910031148-34		NA
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
HB2ATTIC Location: Furnace Aircell	910031148-35	Yes	30 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Grey/Silver, Homogeneous, Fibrous, Aircell			
Asbestos Types: Chrysotile 30.0 %			
Other Material: Cellulose 15 %, Non-fibrous 55 %			

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
AB2ROOF Location:	910031148-36	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 30 %, Fibrous glass 15 %, Non-fibrous 55 %			
AB2RM Location: B2 Roof Mastic	910031148-37	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/Grey, Homogeneous, Fibrous, Roofing Mastic Asbestos Types: Chrysotile 4.0 % Other Material: Cellulose 4 %, Non-fibrous 92 %			
AB1ROOF1 Location: South Roof	910031148-38	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 45 %, Non-fibrous 55 %			
AB1ROOF2 Location: B1 Main Roof	910031148-39	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Cellulose 45 %, Non-fibrous 55 %			
B2ROOF Location: Roof Field	910031148-40	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 10 %, Fibrous glass 15 %, Non-fibrous 75 %			
B4ROOF Location: Roof Field	910031148-41	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 35 %, Non-fibrous 65 %			

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B4RM Location: Roof Mastic	910031148-42	Yes	3 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/Grey, Homogeneous, Fibrous, Roofing Mastic Asbestos Types: Chrysotile 3.0 % Other Material: Cellulose 15 %, Non-fibrous 82 %			
B7ROOF Location: Roof Field	910031148-43	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 35 %, Non-fibrous 65 %			
B7RM Location: Roof Mastic	910031148-44	Yes	5 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/Grey, Homogeneous, Fibrous, Roofing Mastic Asbestos Types: Chrysotile 5.0 % Other Material: Non-fibrous 95 %			
B1SWC Location: Bldg. 1 SW Room Ceiling	910031148-45	Yes	3 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Silver/Brown/Black, Homogeneous, Fibrous, Ceiling Material Asbestos Types: Chrysotile 3.0 % Other Material: Non-fibrous 97 %			
B1SWD Location: Kem - Air Sample	910031148-46	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Cellulose 20 %, Non-fibrous 80 %			
B1BTP Location: B1 Tar Paper Basement	910031148-47	Yes	10 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Fibrous, Tar Paper Asbestos Types: Chrysotile 10.0 % Other Material: Cellulose 35 %, Non-fibrous 55 %			

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1ROOF Location: Roof Field Perimeter Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 35 %, Non-fibrous 65 %	910031148-48	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1SWEX Location: Pipe L. Ext. SW Analyst Description: Brown, Homogeneous, Fibrous, Pipe Insulation Asbestos Types: Chrysotile 8.0 % Other Material: Cellulose 82 %, Non-fibrous 10 %	910031148-49	Yes	8 % (by CVES) by Paola Ducoing on 03/10/10
B2INT2 Location: Bldg. 2 Interior T. Paper Analyst Description: Black, Homogeneous, Fibrous, Barrier Paper Asbestos Types: Other Material: Cellulose 65 %, Non-fibrous 35 %	910031148-50	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B5TR Location: Bldg. 5 Transite Analyst Description: Grey, Homogeneous, Fibrous, Transite Asbestos Types: Crocidolite 10.0 %, Chrysotile 20.0 % Other Material: Non-fibrous 70 %	910031148-51	Yes	30 % (by CVES) by Paola Ducoing on 03/10/10
B5P1EXT Location: Bldg. 5 Exterior Window Putty Analyst Description: Grey, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Chrysotile 2.0 % Other Material: Non-fibrous 98 %	910031148-52	Yes	2 % (by CVES) by Paola Ducoing on 03/10/10
B5P2INT Location: Bldg. 5 Interior Window Putty Analyst Description: Grey, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Chrysotile 2.0 % Other Material: Non-fibrous 98 %	910031148-53	Yes	2 % (by CVES) by Paola Ducoing on 03/10/10

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B6INT1 Location: Bldg. 6 Interior Stucco	910031148-54	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige/Green, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %			
B6PW Location: Bldg. 6 Pipe Wrap	910031148-55	Yes	30 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/White, Homogeneous, Fibrous, Pipe Wrap Asbestos Types: Chrysotile 30.0 % Other Material: Non-fibrous 70 %			
B6WP Location: Bldg. 6 Window Putty	910031148-56	Yes	2 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Grey, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Chrysotile 2.0 % Other Material: Non-fibrous 98 %			
B6EWSOF Location: Bldg. 6 East Sable Shingle	910031148-57	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Non-Fibrous, Roofing Asbestos Types: Other Material: Cellulose 8 %, Non-fibrous 92 %			
B10ESC Location: Bldg. 10 Exterior Stucco	910031148-58	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %			
B10DWC Location: Bldg. 10 Drywall Compound	910031148-59	Yes	3 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Fibrous, Joint Compound / Tape Asbestos Types: Chrysotile 3.0 % Other Material: Cellulose 10 %, Non-fibrous 87 %			

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
AB5EXST	910031148-60		NA
Location: (Sample Not Submitted) Bldg. 5 Exterior Stucco			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
AB3PC	910031148-61	Yes	30 %
Location: Bldg. 3 Pipe Coating			
Analyst Description: Black/White, Homogeneous, Fibrous, Pipe Wrap			
Asbestos Types: Chrysotile 30.0 %			
Other Material: Non-fibrous 70 %			
B4BB	910031148-62L1	Yes	3 %
Location: Bldg. 4 Baseboard			
Analyst Description: Black, Homogeneous, Non-Fibrous, Baseboard			
Asbestos Types: Chrysotile 3.0 %			
Other Material: Non-fibrous 97 %			
B4BB	910031148-62L2	No	NAD
Location: Bldg. 4 Baseboard			
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
B4RT	910031148-63	No	NAD
Location: Bldg. 4 Roofing Tiles (Stoned)			
Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Cement Tile			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
B4ROOF	910031148-64	No	NAD
Location: Bldg. 4 Roof Field			
Analyst Description: Black, Homogeneous, Fibrous, Roofing			
Asbestos Types:			
Other Material: Cellulose 15 %, Non-fibrous 85 %			

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B4LINO Location: Bldg. 4 VFT w/Black Mastic Analyst Description: Grey/Tan, Homogeneous, Fibrous, Flooring Asbestos Types: Other Material: Cellulose 25 %, Non-fibrous 75 %	910031148-65L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B4LINO Location: Bldg. 4 VFT w/Black Mastic Analyst Description: Brown/Yellow, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-65L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B4LINO Location: Bldg. 4 VFT w/Black Mastic Analyst Description: Black, Homogeneous, Fibrous, Barrier Paper Asbestos Types: Other Material: Cellulose 65 %, Non-fibrous 35 %	910031148-65L3	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B4VFT Location: Bldg. 4 VFT w/Black Mastic Analyst Description: Grey, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %	910031148-66L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
B4VFT Location: Bldg. 4 VFT w/Black Mastic Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-66L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
HB2TP Location: Tar Paper Under Wood Floor Analyst Description: Black, Homogeneous, Fibrous, Tar Paper Asbestos Types: Other Material: Cellulose 65 %, Non-fibrous 35 %	910031148-67	No	NAD (by CVES) by Paola Ducoing on 03/10/10

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
H32WP Location: Window Putty	910031148-68	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Other Material: Non-fibrous 100 %			
B2INT1 Location: Bldg. 2 Interior Drywall Compound	910031148-69	Yes	2 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Fibrous, Joint Compound / Tape Asbestos Types: Chrysotile 2.0 % Other Material: Cellulose 10 %, Non-fibrous 88 %			
AB1RM Location: Roof Mastic	910031148-70	Yes	5 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/Grey, Homogeneous, Non-Fibrous, Roofing Mastic Asbestos Types: Chrysotile 5.0 % Other Material: Non-fibrous 95 %			
AB1ROOF3 Location: Roof Mastic	910031148-71	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/White, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Fibrous glass 15 %, Non-fibrous 85 %			
HB5ROOF Location: Roof Mastic	910031148-72		NA
Analyst Description: Bulk Material Asbestos Types: Other Material: Comment: Missing sample.			

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
HB1ROOF Location: Roof Field Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Other Material: Cellulose 20 %, Fibrous glass 15 %, Non-fibrous 65 %	910031148-73	No	NAD (by CVES) by Paola Ducoing on 03/10/10
HB7ROOF Location: Roof Mastic Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Chrysotile 3.0 % Other Material: Cellulose 20 %, Fibrous glass 15 %, Non-fibrous 62 %	910031148-74	Yes	3 % (by CVES) by Paola Ducoing on 03/10/10
HB6ROOF Location: Roof Mastic Analyst Description: Black, Homogeneous, Fibrous, Roofing Asbestos Types: Chrysotile 3.0 % Other Material: Cellulose 20 %, Fibrous glass 15 %, Non-fibrous 62 %	910031148-75	Yes	3 % (by CVES) by Paola Ducoing on 03/10/10
AB1WP Location: Window Putty Analyst Description: Beige, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Other Material: Non-fibrous 100 %	910031148-76	No	NAD (by CVES) by Paola Ducoing on 03/10/10
AB1R4CC Location: "Cottage Cheese" Room 4 Analyst Description: Beige, Homogeneous, Non-Fibrous, Acoustic Ceiling Asbestos Types: Other Material: Non-fibrous 100 %	910031148-77	No	NAD (by CVES) by Paola Ducoing on 03/10/10
AB1R5LINO Location: Room 5 Linoleum Analyst Description: Brown/Grey, Homogeneous, Fibrous, Linoleum Asbestos Types: Chrysotile 15.0 % Other Material: Cellulose 5 %, Non-fibrous 80 %	910031148-78	Yes	15 % (by CVES) by Paola Ducoing on 03/10/10

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
AB1EXTST Location: Exterior Stucco	910031148-79.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Finish Coat			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
AB1EXTST Location: Exterior Stucco	910031148-79.2	Yes	Trace (<1 %) (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Base Coat			
Asbestos Types: Chrysotile <1. %			
Other Material: Non-fibrous 100 %			
AB1R3VFT Location: Room 3 VFT w/Black Mastic	910031148-80L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types: Chrysotile 4.0 %			
Other Material: Non-fibrous 96 %			
AB1R3VFT Location: Room 3 VFT w/Black Mastic	910031148-80L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
AB1R2VFT Location: Room 2 VFT w/Black Mastic	910031148-81L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile			
Asbestos Types: Chrysotile 4.0 %			
Other Material: Non-fibrous 96 %			
AB1R2VFT Location: Room 2 VFT w/Black Mastic	910031148-81L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic			
Asbestos Types:			
Other Material: Non-fibrous 100 %			

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
AB1R2DWC Location: Room 2 Drywall Compound	910031148-82	Yes	Trace (<1 %) (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile <1. % Other Material: Non-fibrous 100 %			
AB2DWC Location: Bldg. 2 Drywall Compound	910031148-83	Yes	2 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound Asbestos Types: Chrysotile 2.0 % Other Material: Non-fibrous 98 %			
AB2WP Location: Bldg. 2 Window Putty	910031148-84	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Other Material: Non-fibrous 100 %			
AB2VFT2 Location: Bldg. 2 Kitchen VFT	910031148-85	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %			
AB2VFT1 Location: Bldg. 2 Main House VFT	910031148-86L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %			
AB2VFT1 Location: Bldg. 2 Main House VFT	910031148-86L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %			

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
AB2EXST Location: Bldg. 2 Exterior Stucco	910031148-87.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: White, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Finish Coat Asbestos Types: Other Material: Non-fibrous 100 %			
AB2EXST Location: Bldg. 2 Exterior Stucco	910031148-87.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %			
AB2LINO Location: Bldg. 2 Linoleum	910031148-88	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Green/Grey/Black, Homogeneous, Non-Fibrous, Linoleum Asbestos Types: Other Material: Cellulose 35 %, Non-fibrous 65 %			
AB4ST Location: Bldg. 4 Exterior Stucco	910031148-89	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Grey/Cream, Heterogeneous, Non-Fibrous, Cementitious, Stucco Asbestos Types: Other Material: Non-fibrous 100 %			
B1NWBB Location: Bldg. 1 North West Room Baseboard w/Mastic	910031148-90L1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black, Homogeneous, Non-Fibrous, Baseboard Asbestos Types: Other Material: Non-fibrous 100 %			
B1NWBB Location: Bldg. 1 North West Room Baseboard w/Mastic	910031148-90L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %			

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B1EW1 Location: Bldg. 1 East Wall Stucco	910031148-91.1	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Stucco-Skim Coat			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
B1EW1 Location: Bldg. 1 East Wall Stucco	910031148-91.2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Beige, Heterogeneous, Non-Fibrous, Cementitious, Stucco-Base Coat			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
B1RF2-1 Location: Bldg. 1 Debris Field White Pebble Roof Felt	910031148-92	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/White, Homogeneous, Fibrous, Roofing			
Asbestos Types:			
Other Material: Fibrous glass 15 %, Non-fibrous 85 %			
B1RF2-2 Location: Bldg. 1 Debris Field Brown Pebble Roof Felt	910031148-93	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Black/Brown, Homogeneous, Fibrous, Roofing			
Asbestos Types:			
Other Material: Cellulose 35 %, Non-fibrous 65 %			
HB2B1L Location: NW Bathroom Linoleum	910031148-94	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Tan/Green, Homogeneous, Fibrous, Linoleum			
Asbestos Types:			
Other Material: Cellulose 35 %, Non-fibrous 65 %			
HB2B1L Location: NE Bathroom Linoleum	910031148-95	No	NAD (by CVES) by Paola Ducoing on 03/10/10
Analyst Description: Tan/Green, Homogeneous, Fibrous, Linoleum			
Asbestos Types:			
Other Material: Cellulose 35 %, Non-fibrous 65 %			

Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B10-TP Location: Tar Paper Under Stucco Analyst Description: Black, Homogeneous, Fibrous, Barrier Paper Asbestos Types: Other Material: Cellulose 65 %, Non-fibrous 35 %	910031148-96	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1W2WD Location: Bldg. 1 West Wall Window 2, Window Putty Analyst Description: Grey, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Chrysotile 2.0 % Other Material: Non-fibrous 98 %	910031148-97	Yes	2 % (by CVES) by Paola Ducoing on 03/10/10
B7EXTLINO Location: Bldg. 7 East Exterior Linoleum Analyst Description: Multi-Colored, Homogeneous, Fibrous, Linoleum Asbestos Types: Other Material: Cellulose 35 %, Non-fibrous 65 %	910031148-98	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B1R5UFT Location: Bldg. 1 Mezzanine South Room 9" Green VFT Analyst Description: Green, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %	910031148-99L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
B1R5UFT Location: Bldg. 1 Mezzanine South Room 9" Green VFT Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-99L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B6R5SC Location: Bldg. 6 Room 5 N. Wall Skim Coat Analyst Description: Off-White, Heterogeneous, Non-Fibrous, Cementitious, Skim Coat Asbestos Types: Other Material: Non-fibrous 100 %	910031148-100	No	NAD (by CVES) by Paola Ducoing on 03/10/10

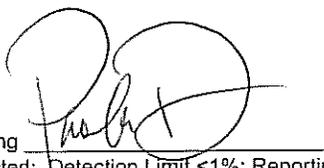
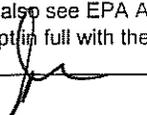
Client Name: Alaska Petroleum Engineering

PLM Bulk Asbestos Report

40100; Mojave Solar LLC

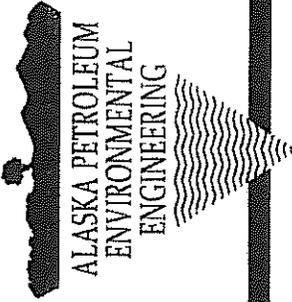
Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
B7EXFT Location: Bldg. 7 Exterior VFT Eastern Side Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile Asbestos Types: Chrysotile 4.0 % Other Material: Non-fibrous 96 %	910031148-101L1	Yes	4 % (by CVES) by Paola Ducoing on 03/10/10
B7EXFT Location: Bldg. 7 Exterior VFT Eastern Side Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic Asbestos Types: Other Material: Non-fibrous 100 %	910031148-101L2	No	NAD (by CVES) by Paola Ducoing on 03/10/10
B10WP Location: Bldg. 10 Window Putty Analyst Description: Beige, Homogeneous, Non-Fibrous, Window Putty Asbestos Types: Other Material: Non-fibrous 100 %	910031148-102	No	NAD (by CVES) by Paola Ducoing on 03/10/10

Reporting Notes:

Analyzed By: Paola Ducoing ; Date Analyzed: 3/10/2010 
 *NAD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; NVA = No Visible Asbestos; PLM (polarized light microscopy) Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0, CA ELAP lab #2322); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This PLM report relates ONLY to the items tested.
 Reviewed By:  3/11/10

CHAIN OF CUSTODY

910031148



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ALASKA 99705
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TURNAROUND TIME:

3- 4 day, fax results when available

PROJECT NUMBER	PROJECT NAME	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	SAMPLERS: (SIGNATURE)
40100	Major Solar LLC				<i>[Signature]</i>
AS2 R3 VFT	Room 3 VFT w/ black waste	3/3/10			
AS2 R2 VFT	Room 2 "				
AS2 R2 DWL	Room 2 drywall compound				
AS2 RWL	Room 2 "				
AS2 WP	Room 2 window putty				
AS2 VFTa	Room 2 kitchen VFT				
AS2 VFT1	Room 2 main hall VFT				
AS2 E+ST	Room 2 exterior window				
AS2 Lino	Room 2 linoleum				
AS4 ST	Room 4 exhibit storage	3/3/10			

TYPE	ANALYSIS						OTHER		
	LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTEX 8021B	VOLATILE ORGANICS 624/8260B		EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X
	S							Asbestos "PCM"	X

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME	Total Number of Containers
<i>[Signature]</i>	3/4/10	<i>[Signature]</i>	3/4/10	<i>[Signature]</i>	3/4/10	<i>[Signature]</i>	3/4/10	10

CHAIN OF CUSTODY



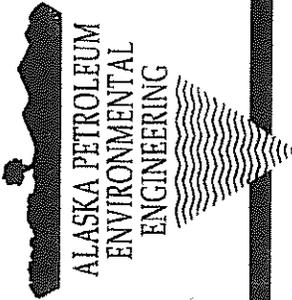
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FAX (714) 897-0031

TURNAROUND TIME:
3-4 day, fax results when available

PROJECT NUMBER	PROJECT NAME	SPECIAL INSTRUCTIONS TO LABORATORY		SAMPLERS (SIGNATURE)	ANALYSIS							OTHER				
		DATE	TIME		LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTEX 8021B	VOLATILE ORGANICS 624/8260B	EXTRACTABLE ORGANICS 625/8270		CCR METALS TOTAL	Asbestos "PCM"	Asbestos "PLM" 600R/R-93-116	
40100	Mojoval John LLC															
B7 Int 2		3/2/10		Bld 2 interior tan paper												
B5 TR				Bld 5 transite												
B5 PE EX				Bld 5 exterior window pulky												
B5 PE Int				1" interior "												
B6 Int I				Bld 6 interior stucco												
B6 PW				Bld 6 pipe wrap												
B6 WP				Bld 6 window pulky												
B6 EW sup				Bld 6 east gable shingle												
B10 ESC				Bld 10 exterior stucco												
B10 DWL		3/2/10		Bld 10 chimney compound												
					Total Number of Containers							10				
REINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED FOR LAB BY: (Signature)		DATE/TIME						
<i>[Signature]</i>		3/1/10 1347		<i>[Signature]</i>		3/4/10		<i>[Signature]</i>		16:33						

CHAIN OF CUSTODY

910031148



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(907) 479-9555

TURNAROUND TIME:

3- 4 day, fax results when available

PROJECT NUMBER	PROJECT NAME	SAMPLERS: (SIGNATURE)	
SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY
B2 roof	3/2/10		Roof (1469)
B4 Roof			Roof washing
B4 Roof			Roof Field
B7 RM			Roof WASTIC
B7 RM			Bldg, SW room ceiling
B1 SWC			Ken-Air sample
B1 SWD			Baton paper Sacramento
B1 BTP			Roof Field perimeter
B1 Roof			pipe lagging ext SW
B1 SWET	3/1/10		

TYPE	ANALYSIS						OTHER			
	LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTEX 8021B	VOLATILE ORGANICS 624/8260B		EXTRACTABLE ORGANICS 625/8270	CGR METALS TOTAL	Asbestos "PCM"
S										X
S										X
S										X
S										X
S										X
S										X
S										X
S										X
S										X

Total Number of Containers

RECEIVED BY: (Signature) *[Signature]* DATE/TIME 3/4/10

RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME 3/4/10

RECEIVED FOR LAB BY: (Signature) *[Signature]* DATE/TIME 10

16:35

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CHAIN OF CUSTODY

910031148



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CALIFORNIA
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FAX (714) 897-0031

TURNAROUND TIME:

3- 4 day, fax results when available

PROJECT NUMBER	PROJECT NAME	SAMPLERS: (SIGNATURE)		SPECIAL INSTRUCTIONS TO LABORATORY	ANALYSIS						OTHER				
		DATE	TIME		LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTEX 8021B	VOLATILE ORGANICS 624/8260B	EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL	Pesticides/Herbicides 8081A / 8151A	Asbestos "PLM" 600R/R-93-116	
40100	NOJWA Sula UC														
PC		3/1/10		north of B1 pipe coating	S										X
B1A				Bld 1 main roof field	S										
B1A				Bld 1 west wall JLUCC	S										
B1C B2				Bld 1 mezzanine baseboard w/yellow paint	S										
FT3				north of Bld 1 debris field 9" UFT	S										
B1 A1				Bld 1 1/2" ACT w/ brown washable Sula	S										
B1 A1					S										
FT 2				north of Bld 1 debris field 9" gran UFT	S										
FT 2				" " " " 9" white UFT w/510 paint	S										
B2 NW1		3/1/10		Bld 1 north wall JLUCC	S										

Total Number of Containers

9

RELINQUISHED BY: (Signature)

DATE/TIME 3/4/10

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DATE/TIME 3/4/10

RELINQUISHED BY: (Signature)

DATE/TIME 3/4/10

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DATE/TIME 16/35

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PROJECT NUMBER	PROJECT NAME	SAMPLERS: (SIGNATURE)	
40100	Mojoan	[Signature]	
SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY
H37 VFT	3/1/10		VFT
B8 WP			Bld 8 window puffy
B8 Insc			Bld 8 interior skim coat
B8 FT2			Bld 8 beige VFT w/ black mastic
B8 FT			Bld 8 beige VFT w/ yellow mastic
B8 DWL			Bld 8 dry wall compound
B8 Int ST			Bld 8 interior studs
B8 Wdy			Bld 8 roof field
B8 E+ ST			Bld 8 exterior studs
B8 Admin	3/1/10		Bld 1 debris field shingle

TYPE	GLASS/PLASTICS/BRASS/SS	LIQUID/SOLID	ANALYSIS						OTHER
			FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTEX 8021B	VOLATILE ORGANICS 624/8260B	EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL	
		SP						Asbestos "PCM"	X
								Asbestos "PLM" 600R/R-93-116	X

Total Number of Containers

10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
[Signature]	3/4/10	[Signature]	3/4/10

16.85

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TURNAROUND TIME:

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PROJECT NUMBER: 40100 PROJECT NAME: NOJUNY SOLAR LLC
SAMPLERS: (SIGNATURE) *[Signature]*

SAMPLE ID: DATE: TIME: SPECIAL INSTRUCTIONS TO LABORATORY

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY
B1NRJ	7/1/10		north roof parapit, coping felt
B2EXT			B10 & exterior shuco
B3SWI			B10 & south wall shuco
B4EMQ			B10 center mezzanine roof & VFT
B5CFT			B10 center 9" VFT
B6CR&ACT			B10 mezzanine beam & 2x4' ACT
B7CCeil			B10 center ceiling shuco
B8SWST			B10 SW corner copy shuco
B9CSTR			B10 stain tracks
B10VFT	7/1/10		B10 North west roof VFT

TYPE	ANALYSIS	OTHER
LQUID/SOLID	FUEL 8015 - M/E / CARBON CHAIN	Asbestos "PLM" 600R/R-93-116
	GLASS/PLASTICS/BRASS/SS	
S	PETROLEUM HC 418.1	
S	BTXE 8021B	
S	VOLATILE ORGANICS 624/8260B	
S	EXTRACTABLE ORGANICS 625/8270	
S	CCR METALS TOTAL	
S	Pesticides/Herbicides 8081A / 8151A	
S		
S		
S		
S		
S		
S		

RECEIVED BY: (Signature) *[Signature]* DATE/TIME: 7/1/10
 RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME: 7/1/10
 RECEIVED FOR LAB BY: (Signature) *[Signature]* DATE/TIME: 7/1/10
 Total Number of Containers: 10

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PROJECT NUMBER	PROJECT NAME	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	SAMPLERS: (SIGNATURE)	ANALYSIS						OTHER				
						LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTEX 8021B	VOLATILE ORGANICS 624/8260B		EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL	Asbestos "PCM"	Asbestos "PLM" 600R/R-93-116
40100	Mo'ave Solar LLC				<i>[Signature]</i>											
H02 roof		3/1/10		3 layer + tarp paper		SP										X
H02 RM				roof mastic												
H04 roof				pole barn shed												
H02 roof 2				roof of water heater room (exterior)												
H05 roof																
H02 attic				Furnace A/C unit												
A02 roof																
A07 RM				B2 roof mastic												
A01 roof 1				B1 south roof												
A01 roof 2		3/1/10		B1 main roof												

RECEIVED BY: (Signature) *[Signature]* DATE/TIME 3/4/10
 RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME 3/4/10
 RECEIVED FOR LAB BY: (Signature) *[Signature]* DATE/TIME 16.35
 Total Number of Containers 10

CHAIN OF CUSTODY

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TURNAROUND TIME:

3- 4 day, fax results when available

PROJECT NAME: *Mojave John LLC*
SAMPLERS: (SIGNATURE) *[Signature]*

SPECIAL INSTRUCTIONS TO LABORATORY

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY
AB1 RM	3/2/10		noy mndic
AB1 conf			
HB5 conf			
HB7 conf			noy fields
HB7 noy			
HB6 noy			
AB1 WP			Window pthy
AB1 R4 CC			"cottage cheese" Room 4
AB1 R5 Lino			Room 5 linoleum
AB1 ext st	3/2/10		et Union - JNU10

TYPE	ANALYSIS						OTHER			
	LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTXE 8021B	VOLATILE ORGANICS 624/8260B		EXTRACTABLE ORGANICS 625/8270	CGR METALS TOTAL	Asbestos "PCM"
S P									X	X
S P										X

REINQUISHED BY: (Signature) <i>[Signature]</i>	DATE/TIME <i>3/4/10</i>	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE/TIME <i>3/4/10</i>	RECEIVED FOR LAB BY: (Signature)	DATE/TIME <i>10</i>
Total Number of Containers					

HERBICIDES & PESTICIDES

ABC Environmental Laboratories

Dr. Wang
Alpha Scientific Corporation
16760 Gridley Road
Cerritos, CA 90703

3/9/2010

Project: AD003012
Project Site: Mojave Solar LLC
Sample Date: 3/1/2010
Lab Job No.: AS10C010

Dear Dr. Wang:

Enclosed please find the analytical report for the samples received by ABC Environmental Laboratories on 3/6/2010 and analyzed by the following EPA method:

EPA 8151A (Chlorinated Herbicides)

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

ABC Environmental Laboratories is certified by the CA DHS (Certificate No.2584). Thank you for giving us the opportunity to serve you.

Please feel free to call me at (909) 923-8628 if our laboratory can be of further service to you.

Respectfully,

ABC Environmental Laboratories, Inc.

Ken Zheng, M.S.
Laboratory Director



Enclosures

This cover letter is an integral part of this analytical report.

ABC Environmental Laboratories

Client:	Alpha Scientific Corporation	Lab Job No.:	AS10C010
Project:	AD003012	Date Sampled:	3/1/2010
Project Site:	Mojave Solar LLC	Date Received:	3/6/2010
Matrix:	Soil	Date Extracted:	3/6/2010
Batch No.:	0309-HES-S	Date Analyzed:	3/9/2010
		Date Reported:	3/9/2010

EPA 8151A (Chlorinated Herbicides)

Reporting Unit: µg/kg (PPB)

Lab Sample I.D.	Method Blank	AS10C010-1			
Client Sample I.D.		AG-1			
Compound	RL				
2,4-DB	10	ND	ND		
2,4-D	5	ND	ND		
Dalapon	5	ND	ND		
Dicamba	5	ND	ND		
Dichloroprop	5	ND	ND		
Dinoseb	5	ND	ND		
MCPA	200	ND	ND		
MCPP	200	ND	ND		
4-Nitrophenol	5	ND	ND		
Pentachlorophenol	5	ND	ND		
Silvex	5	ND	ND		

ND: Not Detected (Below RL).

RL: Reporting Limit.

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AD003012 1/2

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ENVIRONMENTAL
ENGINEERING

TURNAROUND TIME:

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PROJECT NUMBER	PROJECT NAME	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	SAMPLERS: (SIGNATURE)
40100	Mojave Solar LLC				<i>[Signature]</i>
					AD003012
B1-1		3/1/10	0815	I gave ID's on all plastics - 1 CAPS only on TG on -2 DRAIN tube (Analyte @ "top" of tube)	
B1-2			0819		
B1-3			0829		
B2-1			0917		
B2-2			0918		
B3-1			0950		
B3-2			0953		
B4-1			1023		
B4-2			1026		
B5-1		3/1/10	1040		

TYPE	ANALYSIS						OTHER			
	LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTXE 8021B	VOLATILE ORGANICS 624/8260B		EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL	Pesticides/Herbicides 8081A / 8151A
S	B	X								
S	B									
S	B				X					
S	B									
S	B									
S	B									
S	B									
S	B									
S	B									
S	B									

RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME: 3/4/10

RECEIVED BY: (Signature) *[Signature]* DATE/TIME: 3-4-10 13:11 pm

RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME: 3-4-10 13:11 pm

RECEIVED FOR LAB BY: (Signature) *[Signature]* DATE/TIME: 3-4-10 13:11 pm

Total Number of Containers: 10

CHAIN OF CUSTODY

AD003012 2/2



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(907) 479-9555

TURNAROUND TIME:

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PROJECT NUMBER: 40100
PROJECT NAME: Mojave Solar LLC
SAMPLERS: (SIGNATURE) *[Signature]*
SPECIAL INSTRUCTIONS TO LABORATORY: AD003012 -11

DATE: 3/10/10
TIME: 1045
SPECIAL INSTRUCTIONS TO LABORATORY: composite of 14 samples

SAMPLE ID: B5-2
AG-1
slag
B509

DATE/TIME: -11
-12
-13
-14

TYPE	ANALYSIS						OTHER			
	LIQUID/SOLID	GLASS/PLASTICS/BRASS/SS	FUEL 8015 - M/E / CARBON CHAIN	PETROLEUM HC 418.1	BTXE 8021B	VOLATILE ORGANICS 624/8260B		EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL	Pesticides/Herbicides 8081A / 8151A
S	B	X								
S	P						X			
S	P						X			
S	P	X					X			
S										
S										
S										
S										
S										
S										

RECEIVED BY: (Signature) *[Signature]* DATE/TIME: 3/4/10
 RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME: 3/4/10
 RECEIVED FOR LAB BY: (Signature) *[Signature]* DATE/TIME: *[Signature]*
 Total Number of Containers: 2
 3-4-10 12:47pm

SUBCONTRACTOR CHAIN OF CUSTODY

PESTICIDE & HERBICIDE SAMPLING EVALUATION

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1.1 Hypothetical Basis for Evaluation	1
1.2 Worst Case Scenario	1
1.3 Subject Property and Potential Pesticide Use	2
1.4 Purpose and Objectives.....	2
2.0 Nature of Pesticides	2
3.0 Historical Use of Pesticides in Orchards	3
4.0 Regulatory Basis for Sampling Agricultural Use Properties	4
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4.2 Sampling Protocols for Soil Import to "Sensitive" Sites.....	5
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6.0 Conclusion	8

Attachments

Attachment 1	<i>"Interim Guidance for Sampling Agricultural Soils", California Environmental Protection Agency - Department of Toxic Substances Control ("DTSC"), June 28, 2000</i>
Attachment 2	<i>Interim Guidance for Sampling Agricultural Properties (Third Revision), DTSC, April 30, 2008.</i>
Attachment 3	<i>Information Advisory: Clean Imported Fill Material, DTSC, October 2001</i>

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<u>Section</u>		<u>Page</u>
Attachment 4	<i>California Code of Regulations – Title 22, Metals Regulatory Action Limits, and United States Environmental Protection Agency - Region IX (“USEPA”) Regional Screening Levels (“RSLs”), April 2004</i>	

1.0 Introduction

1.1 *Hypothetical Basis for Evaluation*

The following evaluation is based on a hypothetical analysis of pesticide use on an agricultural use property. As part of this analysis, the proposed Mojave Solar LLC project (hereafter referred to as the "Site") is considered as being historically used for an orchard (rationale of this designation further explained below). From scores of site characterizations that *Alaska Petroleum Environmental Engineering, Inc.* has conducted in southern California in Kern, Los Angeles, Orange, Riverside, Ventura, and San Bernardino counties, organochlorine pesticides (OCPs) have only been detected above residential regulatory action limits in:

- Orchards and former orchards, and
- Storage areas and related spills (i.e., one residential site where commercial flower farming was conducted and pesticides were mixed, stored and over applied; and the Los Angeles County Agricultural Commissions field office where pesticides and herbicides for the entire county were stored and mixed (i.e., spills).

Thousands of acres have been investigated upon which grains, vegetables/fruits (e.g., strawberries, etc.), and animal feedstock has been grown. Pesticides/herbicides have not been detected above regulatory action limits.

1.2 *Worst Case Scenario*

OCPs were first introduced into California agriculture in 1944 and reached their peak usage in the 1960s. In 1974, the use of DDT, an (OCP), was banned in California for agricultural purposes, and the elimination of remaining OCPs quickly followed.

For this evaluation, DDT is being considered as it was primarily used in fruit orchards [information obtained from the Los Angeles County Agricultural Commission, Department of Pesticides]. DDT has one of the longest pesticide/herbicide "half-lives" ("half-life" is defined in Section 2.0). Therefore, in this worst case scenario analysis, the following assumptions were used:

- DDT was used following the manufacturer's application rates, and
- it is calculated that the residual DDT concentration would be currently below all regulatory action limits or human health based risk goals,

then any other pesticide/herbicide that may have been applied, which are all known to have shorter "half-lives", would also pose no environmental or health effects as the residual concentration(s) would be even less than DDT.

1.3 *Subject Property and Potential Pesticide Use*

The Site is approximately 1,800 acres in size. It had been used for agricultural purposes (i.e., grains, alfalfa, etc.) and it is known that pesticide(s) were used in the agricultural operations.

1.4 *Purpose and Objectives*

The intent of this review is to determine if sampling for pesticides was warranted. Fruit orchards are being used in this analysis as they typically had the highest pesticide application rates.

2.0 Nature of Pesticides

"Half-life" is a measure of the persistence of a pesticide in soil; it is the amount of time required for one-half of the material to degrade. Based upon degradation rates, pesticides can be categorized as:

- non-persistent: "half-life" less than 30 days,
- moderately persistent: "half-life" 30 to 100 days, or
- persistent: "half-life" greater than 100 days.

A "typical" soil "half-life" value is an approximation and may vary greatly because persistence is sensitive to variations in a site's soil, climate, etc. The sorption coefficient ("Koc") describes the tendency of a pesticide to bind to soil particles and is derived from laboratory data. Sorption retards movement, and may also increase persistence because the pesticide is protected from degradation. The higher the Koc, the greater the sorption potential. Many soil and pesticide factors may influence the actual sorption of a pesticide to soil.

The Groundwater Ubiquity Score ("GUS") is an empirically derived value that relates pesticide persistence (half-life) and sorption in soil (Koc). The GUS may be used to rank pesticides for their potential to vertically migrate to groundwater:

$$\text{GUS} = \log_{10}(\text{"half-life"}) \times [4 - \log_{10}(\text{Koc})]$$

The pesticide movement rating is derived from the GUS. Movement ratings range from “extremely low” to “very high”. Pesticides with a GUS less than 0.1 are considered to have an extremely low potential to migrate towards groundwater. Values of:

- 1.0 - 2.0 are “low”
- 2.0 - 3.0 are “moderate”,
- 3.0 - 4.0 are “high”, and
- values greater than 4.0 have a “very high” potential to migrate towards groundwater.

Solubility describes the amount of pesticide that will dissolve in a known volume of water. The higher the solubility, the more soluble the pesticide. Highly soluble pesticides are more likely to be removed from the soil by runoff (e.g., from stormwater, excessive irrigation, etc.) or by moving below the plant’s root zone with excess water.

3.0 Historical Use of Pesticides in Orchards

For this discussion, chemical compounds included under the general classification of “pesticides” are herbicides, insecticides, rodenticides, fungicides, and “others”. The likelihood of finding elevated concentrations of pesticides would be greater on properties where the chemical usage was higher due to the type of crops that were planted such as fruit orchards as compared to grains (e.g., alfalfa, etc.).

A copy of that portion of the “Interim Guidance for Sampling Agricultural Soils”, California Environmental Protection Agency - Department of Toxic Substances Control (“DTSC”), June 28, 2000 pertaining to the analyses and “half-life” of commonly used pesticides/herbicides (i.e., degradation rates) is included as *Attachment 1*. According to the Los Angeles Agricultural Commission, Department of Pesticides (Mr. Jahan Motakef), the most commonly used pesticides in fruit orchards before the 1970s were DDT and Carbaryl (trade name of “Sevin”).

With respect to the aforementioned criterion pertaining to the nature of pesticides, the following applies to these chemicals [Pesticide Properties Database, Kerle & Jenkins, 07/24/94].

Pesticide	Movement Rating	Soil Half-Life (days)	Water Solubility (mg/l)	Sorption Coefficient (soil Koc)
DDT	Extremely Low	2,000	0.0055	2,000,000
Carbaryl ("Sevin")	Low	10	120	300

DDT is commonly used as a benchmark in determining if residual pesticides may be a concern on a property because it has one of the longest "half-lives". Therefore, if the concentration of DDT were low all other pesticides would have degraded earlier since they have a shorter half-life.

4.0 Regulatory Basis for Sampling Agricultural Use Properties

Pesticide sampling strategies utilized in California are conservative since they were developed for new or expansion of existing, school sites. These strategies were expanded to ensure that inappropriate fill material was not imported onto other "sensitive" land use properties such as day care centers, homes, hospitals, etc.

Included in the pesticide guidelines are sampling strategies pertaining to the presence of regulated "heavy" metals which were used in both pesticides and fertilizers formulations. In addition to pesticides/herbicides and regulated "heavy" metals, other constituents of concern ("COC") are addressed in these guidelines which may be present at concentrations above regulatory action levels or applicable health-based risk goals in imported soils. COCs also typically include asbestos and hydrocarbons.

Specifically for agricultural use properties the DTSC guidance document,

- (1) "does not apply to disturbed land, such as, land that has been graded in preparation for construction, areas where imported soil has been brought in, or any other activity that would redistribute the soil, other than normal disking and plowing";
- (2) "is not applicable to areas where pesticides were mixed, stored, disposed, or areas where pesticides may have accumulated, such as ponds and drainage ditches";

- (3) states that “animal facilities such as cattle and poultry barns, settling ponds, and manure piles” are excluded; and
- (4) indicates that agricultural usage on properties “ending prior to 1950” do not need to be evaluated for pesticides; however, “arsenical pesticides and herbicides predates 1950” and should be evaluated.

The USEPA RSLs have been established for various chemical and inorganic compounds (e.g., regulated “heavy” metals), which pertain to residential and industrial properties. A RSL is defined as that constituent concentration that is acceptable to remain in-place.

4.1 *Sampling Protocols in Agricultural Fields for School Sites*

Please note that this sampling strategy presents a “worse-case” scenario, as it pertains to school sites; the Site will be a concentrating solar plant (electrical generation). Therefore, the human exposure pathways (e.g., ingestion, inhalation and dermal contact) are short-term and are only applicable for an on-Site construction worker. Samples should be collected at each location at the surface (zero to six inches) and from two to three feet below ground surface and analyzed for pesticides. For a property over 50 acres in size, the DTSC should be contacted in order to determine the suggested minimum number of sample locations.

In addition, a minimum of four on-Site “background” soil samples should be collected for regulated “heavy” metal analysis. DTSC limited the regulated “heavy” metal analysis to the 17 California Assessment Manual (“CAM”) metals. A list of the 17 CAM metals and the applicable USEPA RSLs for residential use properties is presented in *Attachment 4*. Included in this attachment is also the RSL for DDT.

4.2 *Sampling Protocols for Soil Import to “Sensitive” Sites*

No information was made available if any soil will be imported to the Site. If this may happen, there are regulatory guidelines for soil sampling to ensure that the import source is “clean”. The DTSC developed the following sampling strategies.

Recommended Fill Material Sampling Schedule

Sample Frequency	
Area of Individual Borrow Area (acres)	Samples Requirements
2 or less	Minimum of 4 samples
2 to 4	Minimum of 1 sample every ½ acre
4 to 10	Minimum of 8 samples
Greater than 10	Minimum of 8 locations with 4 sub-samples per

	location
Sample Frequency (cubic yards ["cy"])	
Volume of Borrow Area Stockpile (cy)	Samples per Volume
Less than 1,000	1 sample per 250 cy
1,001 to 5,000	4 samples for first 1,000 cy, plus 1 sample for each additional 500 cy
5,000+	12 samples for the first 5,000 cy, plus 1 sample per each additional 1,000 cy

5.0 Technical Evaluation

- The DTSC sampling guidelines pertaining to agricultural properties (i.e., for pesticides and regulated "heavy" metals) do not apply because the Site will:
 - (1) not be developed into a school facility, and
 - (2) will be graded for construction purposes.
- The DTSC sampling guidelines pertaining to soil imported to "sensitive" sites does apply, only if the grading plans call:
 - (1) for import, and the import comes from an past or present agricultural use property, or potentially if,
 - (2) there is export of the Site soil to another "sensitive" use site.
- *If* DDT and/or Carbayl ("Sevin") were used at the Site, DDT would be the predominant COC. DDT has a high sorption coefficient, which retards movement within the soil matrix, thereby making it more persistent in nature, and its half-life is approximately 5.5 years (2,000 days). Therefore, given the following Site information regarding DDT use:
 - in the interim time period from 1974 (when DDT was banned for use on agricultural properties) and 2010, DDT would have degraded by 6.6 half-lives;
 - the USEPA residential RSL for DDT is 1.7 parts per million ("ppm");
 - the typical application rate for DDT over two treated acres of fruit groves would be anywhere between a few ounces to a few pounds; without knowing the application rates and duration of treatment the potential residual amount of DDT in the soil cannot be determined.

The following calculation, using “reverse” mathematics, provides useful information as to a “typical” DDT application rate. For example, given:

1. The residential use RSL is 1.7 ppm.
2. DDT has a half-life of about 5.5 years (2,000 days).
3. Assuming the Site currently contains DDT at the residential RSL, when it was applied 36 years ago (i.e., 6.55 half-lives), the concentration would be about 125 ppm.

PRG	1 st ½ life	2 nd	3 rd	4 th	5 th	6 th	7 th
1.7	x2	x2	x2	x2	x2	x2	x2
=	3.4	6.8	13.6	27.2	54.5	81.6	163.2

The question is how many grams or pounds were applied which is equivalent to 125 ppm? Using the following assumptions or given:

- (1) DDT is only present in the upper one inch of soil on one acre,
- (2) soil density is 1.35 tons per cubic yard, and
- (3) unit conversion factors (“cf”):

$$(1 \text{ acre})(43,560 \text{ square feet per acre}^{[cf]})(1 \text{ inch DDT soil penetration}/12 \text{ inches per foot}^{[cf]})(1 \text{ cubic yard per } 27 \text{ cubic feet}^{[cf]})(1.35 \text{ tons per cubic yard})(2,000 \text{ pounds per ton}^{[cf]}) =$$

363,000 pounds of soil on 1 acre to a depth of 1 inch.

By definition, ppm is the equivalent to any unit of measurement per one million of that measurement. For example, using pounds as a basis:

$$1 \text{ ppm} = 1 \text{ pound of something per } 1,000,000 \text{ pounds of something.}$$

In the DDT example above, at an initial concentration of 125 ppm, the pounds of DDT, which would have been applied, is as follows.

125 pounds of DDT per million pounds of soil, and 363,000 pounds of soil per 1 acre to a depth of 1 inch or:

$$(125/1,000,000)(363,000) = 40.4 \text{ pounds of DDT applied}$$

This is about 40 times higher than what is considered the maximum DDT application rate (i.e., a few pounds per two acres). Therefore, the likelihood of finding DDT above the residential RSL is very low after 6.5 half-lives. **NOTE:** the commercial property use (i.e., the Site) RSL is 7.0 ppm. Therefore, higher concentrations of OCPs would be “acceptable”.

6.0 Conclusion

No other pertinent data can be determined due to the datagaps cited above; specifically, regarding:

- types of pesticides potentially used,
- pesticide application rates, and
- the duration of the treatment (i.e., how many years).

In general, the aforementioned data should clarify the possibility of soil toxicity based upon the Site’s historical agricultural usage. Based upon the aforementioned pesticide analysis and State guidelines, it appears that the use of pesticides should not be an issue with respect to any proposed development.