

February 5, 1999

Ms. Marina Robertson
GreenPark Ventures, LLC
3030 Old Ranch Parkway, Suite 450
Seal Beach, California 90740-2750

Subject: Results of Preliminary Soil Sampling at
Runkle Ranch in Simi Valley, California

Dear Ms. Robertson:

QST Environmental, Inc. (QST) is presenting the results of a preliminary soil sampling investigation performed at Runkle Ranch. The site is approximately 550 acres and is located at N 1/2 of Section 26, E 1/2 of Section 23, SE 1/4 of Section 14, NW 1/4 of Section 24, SE 1/4 of Section 13, Township 2 N, Range 18 W in Simi Valley, Ventura County, California (Figure 1).

The purpose of the investigation was to determine if operations conducted at the adjacent "Rocketdyne" facility had impacted on-site soils, based on surface run-off carrying radionuclides to the site. Results of the investigation would determine if further site investigation is necessary for the subject site.

Site Investigation Field Activities

On December 23, 1998, a representative of QST and GreenPark Ventures, LLC (GreenPark) arrived at the site to collect four soil samples at three locations identified as S-1, S-2, and S-3 in Figure 2. In addition, one composite sample was collected from a white powdery material found on-site within the area identified as "Powder" in Figure 2.

Two soil samples, S1-0 and S1-1, were collected at location S-1 at 0 and 1 foot depths, respectively. One soil sample, S2-0, was collected at the surface of location S-2. These two sample locations were selected within a natural drainage channel flowing into the site from the Rocketdyne. Location S-1 was selected as close as possible to the Rocketdyne facility and S-2 was selected further down stream. Consequently, these sample locations would potentially represent the worse case on-site impact of radionuclides in surface water run-off from Rocketdyne. One soil sample, S3-0, was collected at the surface of location S-3. Location S-3 was chosen within wall of a natural canyon not impacted by surface water run-off from Rocketdyne. Consequently, this location would serve as the potential on-site background concentration of naturally occurring radionuclides.

Based on the July 1995, EPA Update entitled "The US EPA Announces Results of Rocketdyne's Off-Site Sampling Program for the Santa Susana Field Laboratory", the four soil samples were analyzed for Strontium, Cesium, and Tritium. These three compounds were identified in EPA's report as the radionuclide constituents of concern.

N-1

The composite sample of powder material was collected in the area depicted in Figure 2. The composite sample "Powder" was formed by collecting grab surface samples of the powdery material at four location within the sample area. In order to determine the nature of the powdery material, the composite sample was analyzed for 23 metals ranging from Aluminum to Zinc, total Cyanide, Phosphate, and pH.

Soil Sample Results

The analytical results of the soil samples (Table 1) indicated the presence of Strontium in all samples collected from S-1 and S-2 (ranging from 0.25 to 0.86 pCi/g) that exceeded the EPA average local background concentration of 0.052 pCi/g, referenced in the EPA report. When comparing these same results to the potential on-site background concentration taken from S3-0 (0.41 pCi/g), all of the samples collected at the surface of S-1 and S-2 exceeded this value. However, the sample collected one below grade from S-1 was below the potential on-site background level.

Cesium-137 was detected in Sample S1-1 (0.11 pCi/g) that exceeded the EPA average local background concentration of 0.087 pCi/g. All of the other samples, including the potential on-site background sample (S3-0) were below the EPA background concentration.

Tritium was detected in all soil samples collected at the surface (including the potential on-site background) but was below the EPA average local background concentration of 140 pCi/l. However, due to laboratory (see Attachment A) error in conducting the analysis, the concentrations of Tritium found in the soil samples may not be representative.

When comparing EPA's average local background concentrations of the radionuclides to the potential on-site background (i.e., S3-0), the concentration of Strontium was higher on-site than what was determined by EPA. The on-site background results of the other two constituents were less than the EPA background levels.

The analytical results of the composite powder sample (Table 1) indicated the presence of Aluminum, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Sodium, Vanadium, and Zinc. Of these detected metals, Aluminum, Calcium, Iron, Magnesium, and Potassium were detected in orders of magnitude higher than the other detected metals. When comparing the metals results with EPA Region IX's Residential Preliminary Remediation Goals (PRGs), the results showed that all of the detected metals that had a corresponding PRG, were below the residential limit. No PRGs were available for Calcium, Iron, Magnesium, Potassium, and Sodium. Total Cyanide and Phosphate results for the powder were below laboratory detection limits. The pH of the powder was determined to be 4.0, which is lower than the average pH value of soil.

The laboratory report and QA/QC data pertaining to the analysis of the soil and powder samples are presented in Attachment A.

TABLE 1. RESULTS OF SOIL SAMPLES COLLECTED AT RUNKLE RANCH; 12/23/98

SOIL SAMPLES RADIONUCLIDE RESULTS

SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH	PARAMETERS (pCi/g)		
			Strontium	Cesium	Tritium
S1-0	12/23/98	0'	0.86	0.11	0.4
S1-1	"	1'	0.25	0.036	-0.001
S2-0	"	0'	0.83	-0.002	0.056
S3-0*	"	0'	0.41	0.011	0.008
EPA LOCAL BACKGROUND (pCi/g)			0.052	0.087	140

* NOTE: Sample location may potentially serve as site specific background.

Highest reading: 0.86
background: 0.052

POWDER SAMPLE INORGANIC RESULTS

ANALYTICAL PARAMETERS	SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH	RESULTS (MG/KG)	EPA PRGS (MG/KG)
Aluminum	POWDER	12/23/98	0'	6300	77000
Calcium	"	"	"	3900	NA
Chromium	"	"	"	8	210
Cobalt	"	"	"	8	4600
Copper	"	"	"	12	2800
Iron	"	"	"	18000	NA
Lead	"	"	"	6	130
Magnesium	"	"	"	6600	NA
Manganese	"	"	"	230	3200
Nickel	"	"	"	9	150
Potassium	"	"	"	1800	NA
Sodium	"	"	"	340	NA
Vanadium	"	"	"	27	540
Zinc	"	"	"	30	23000
pH	"	"	"	4 (UNITS)	NA

RATIO:
0.86/0.052
= 16.54
or 17

Conclusions and Recommendations

Based on the analytical results of the soil samples, it would appear that there may have been some impact of radionuclides to the site from the Rocketdyne facility. Consequently, a more extensive site investigation appears to be necessary to determine the lateral and vertical impact of radionuclides in the soil. In addition, based on the results of the potential on-site background sample (S3-0), the site investigation should include background sampling to determine naturally occurring conditions of the radionuclide constituents of concern at Runkle Ranch.

In terms of the powdery material, analytical results indicates that the material consists mainly of metals and inorganics that are normally non-toxic. However, because no residential PRGs have been established for these compounds and the pH appears to lower than average soil values, further limited investigation is recommended.

QST is currently preparing a scope of work to conduct the next phase of the investigation at Runkle Ranch, which will be provided to GreenPark in the near future.

Thank you for allow QST to service your environmental needs. If you should have any questions, please contact the undersigned at (602) 244-1192, ext. 113.

Sincerely,
QST ENVIRONMENTAL, INC.



John S. Kim
Chief Engineer