SFUND RECORDS CTR
3033-00706

April 12, 2001

MEMORANDUM

SUBJECT: Hunters Point Building 364 Removal Action Findings

FROM: Steve M. Dean (SFD-8-B)
Superfund Technical Support Team

TO: Claire Trombadore, Michael Work (SFD-8-3)
DOD and Pacific Islands Section

The following are my comments regarding the radiological investigation and confirmation surveys that I conducted at Hunters Point Naval Shipyard (HPNS) on March 19, 2001:

Building 364 Removal Actions:
First, I evaluated the results of radiological contamination removal actions conducted by the Navy and its contractors at HPNS behind Building 364. The removals were conducted in two areas; the radioactive waste storage sump and a cesium-137 (Cs137) surface spill commonly referred to as the "peanut spill" because to its outline is peanut shaped on the asphalt's surface.

Sump Pit Gamma Survey:
I performed a gross gamma ray survey using a Ludum 2221 rate meter with a 3" x 3" Sodium Iodide gamma probe. I did not find any areas that exhibited gamma anomalies. While all readings were consistent with background, I chose two locations that gave the highest gross gamma readings and performed gamma spectrum analysis on each location. I used an Exploranium GR-130 Spectrum Analyzer to acquire the gamma spectrum data.

Sump Removal Pit Wall Spectrum Analysis:
While this area exhibited the highest gross gamma reading in the pit, the gamma spectrum shows that no gamma emitting radioactive contaminant is present. The elevated background was from the configuration of the wall's undercutting and nearby concrete structures which changed the counting geometry and thus increased the probe's detection efficiency. This translates into a slightly higher peak in the Compton scatter region, from zero to about 400 kilo-electron-volts (kev), of the spectrum. With this one exception, the wall's spectrum compares well to a background spectrum taken on unimpacted asphalt near Building 364. No Radium-226 (Ra226), Cs-137, or other radionuclide contaminants of concern are present in the spectrum.

Sump Removal Pit Floor Spectrum Analysis:
One small indentation in the concrete floor had slightly higher gamma counts. The

indentation was made by workers while removing a small area of fixed contamination on the concrete floor. The spectrum of this area revealed no evidence of any residual radioactive contamination.

B364 Vent wall Spectrum Analysis:
A spectral analysis of the exterior wall of Building 364 exhibited conclusive evidence that considerable Cs137 contamination is present. The Cs137 is localized in a seam between the original wall and a concrete patch that was applied to an old ventilator duct that passed through the exterior wall. This area requires remediation.

B364 Drain Pipe Spectrum Analysis:
A concrete fill iron drain pipe is located under the building just below the ventilator duct area. The pipe also exhibited considerable Cs137 contamination which was confirmed by the spectrum data. A spectrum peak at around 662 kev indicates the presence of Cs137. This pipe should be removed for radiation waste disposal.

Peanut Spill Removal Pit:
My gross gamma survey did not reveal any leveled gamma areas. So, I chose, as closely as I could recall, the region in the spill where the last Cs137 hit had been detected by the GR-130. The spectrum data did not reveal the presence of cesium or any other radionuclide contaminant.

Black Beauty Sandblast Grit:
I analyzed an area in Parcel E impacted by black beauty sandblast grit to determine whether or not this material meets the requirements for removal as a radium-226 waste material. The spectrum on very close scrutiny does reveal a slightly elevated peak at 352 kev, a region associated with lead-214 (Pb214) which is a radium decay daughter. The Navy has agreed to remove and dispose of the sandblast grit even though the radium concentration in the grit may not require it.

Conclusions:
My confirmation surveys indicate that the Navy and its contractors have done admirable work on the Building 364 radioactive waste sump and on the peanut spill removal actions. However, final verification will depend on the confirmation laboratory analysis results. Also, it is unfortunate that more radioactive contamination was found on and under the building which will require more remediation.

If you have any questions or comments please contact me at (415) 744-2391.

Building 364 Removal Action

ED_000855_00002122-00003

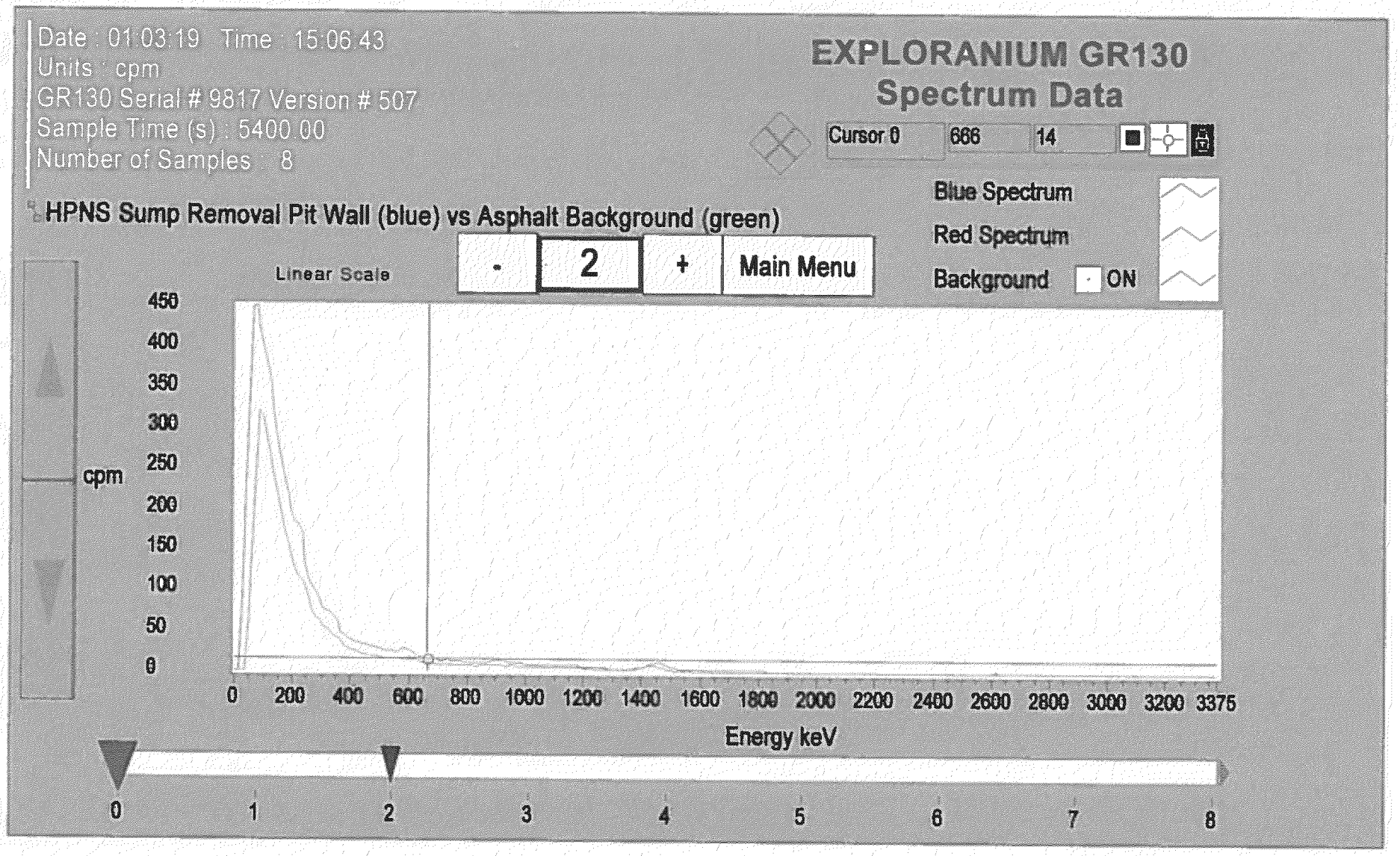
B364 Sump Pit Gamma Survey

ED_000855_00002122-00004

Sump Removal Pit Wall Spectrum Analysis

ED_000855_00002122-00005

Sump Removal Pit Wall Spectrum Analysis



ED_000855_00002122-00007

Sump Removal Pit Floor Spectrum Analysis

Date : 01:03:19 Time : 17:09:26
Units : cpm
GR130 Serial # 9817 Version # 507
Sample Time (s) : 668.00
Number of Samples : 8

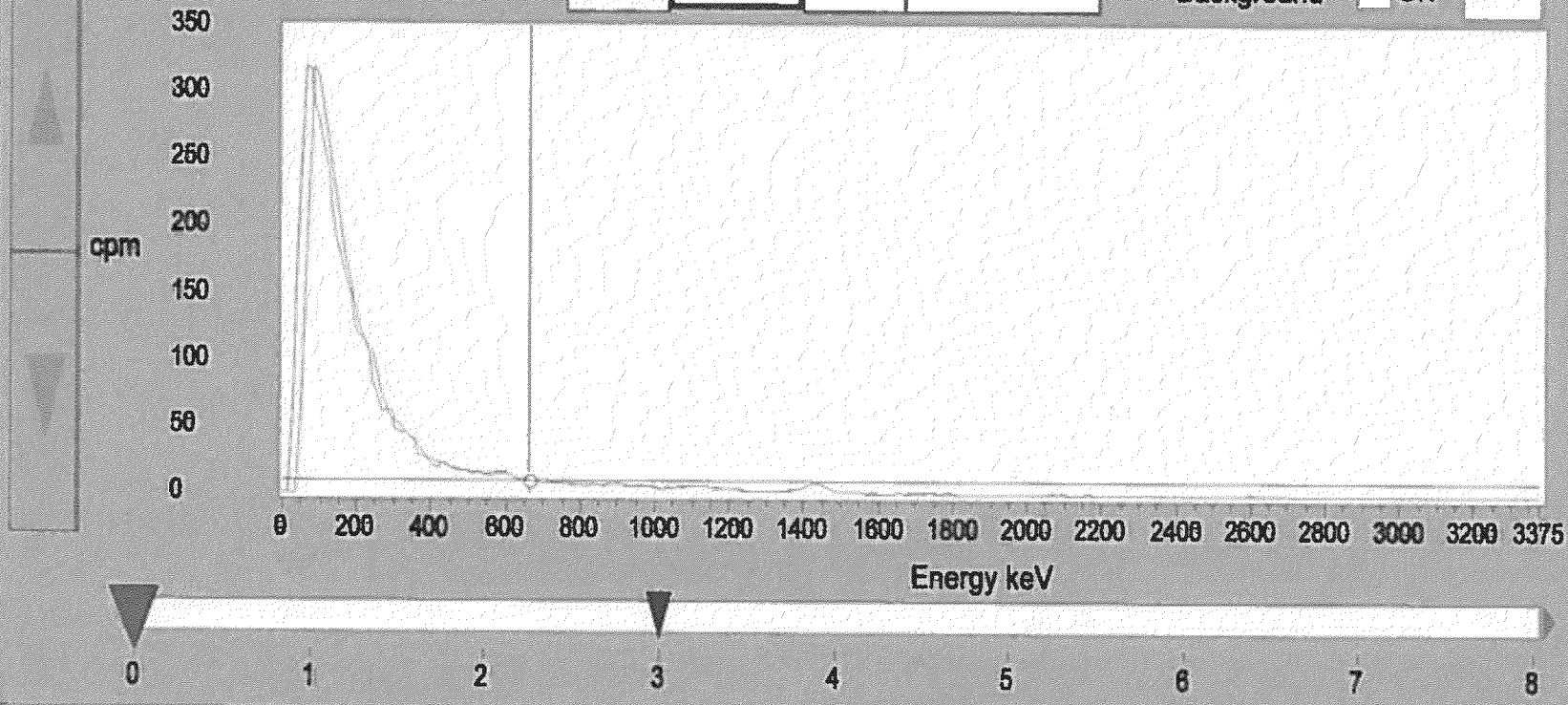
EXPLORANIUM GR130
Spectrum Data

Cursor 0 | 666 | 9

HPNS Sump Removal Pit Floor (blue) vs Asphalt Background (green)

Linear Scale | - | 3 | + | Main Menu

Blue Spectrum
Red Spectrum
Background ON



ED_000855_00002122-00009

B364 Vent Wall Spectrum Analysis

ED_000855_00002122-00010

Date : 01:03:19 Time : 17:27:19
Units : cpm
GR130 Serial # 9817 Version # 507
Sample Time (s) : 622.00
Number of Samples : 8

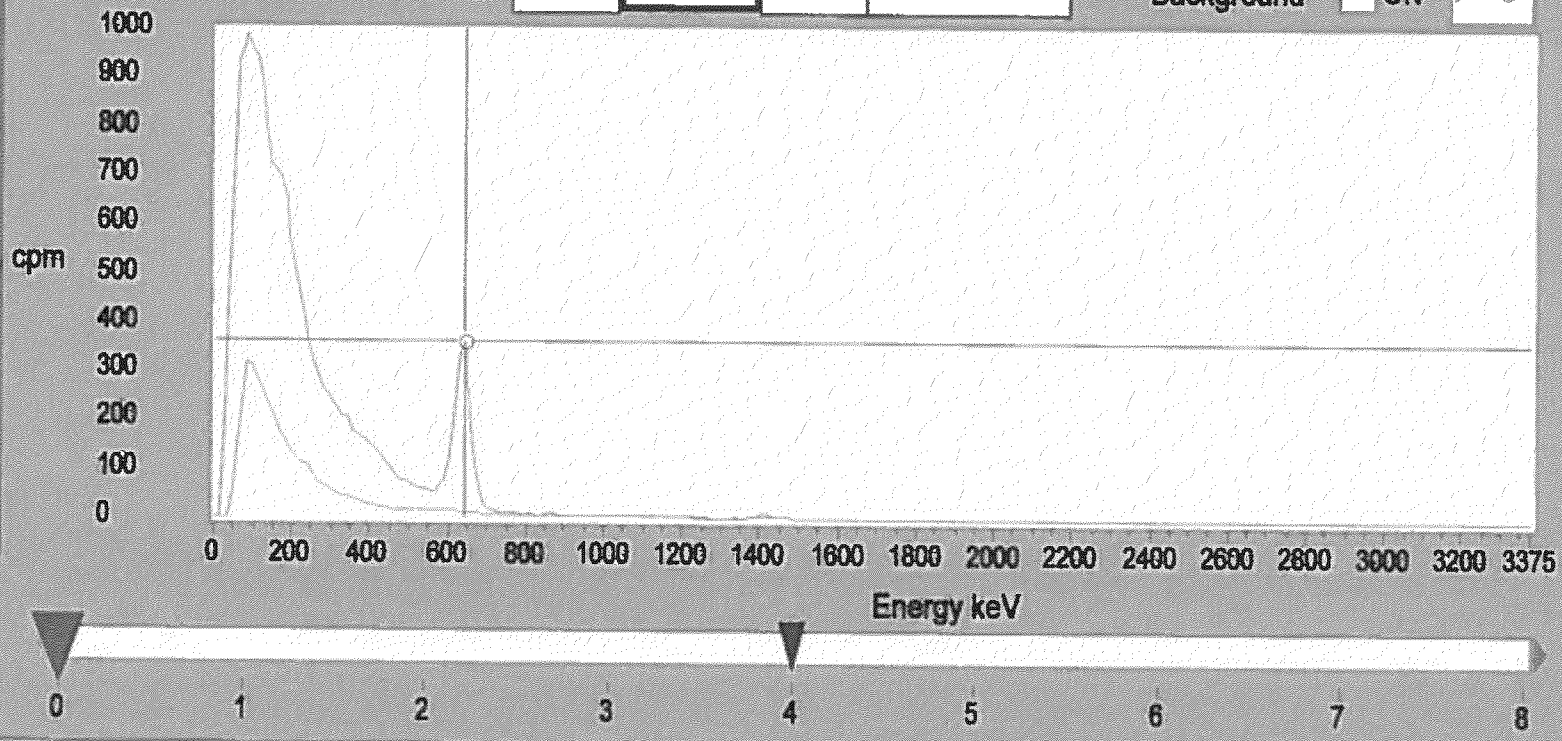
EXPLORANIUM GR130
Spectrum Data

Cursor 0 | 641 | 359

HPNS Building 364 Exterior Wall (blue) vs Asphalt Background (green)

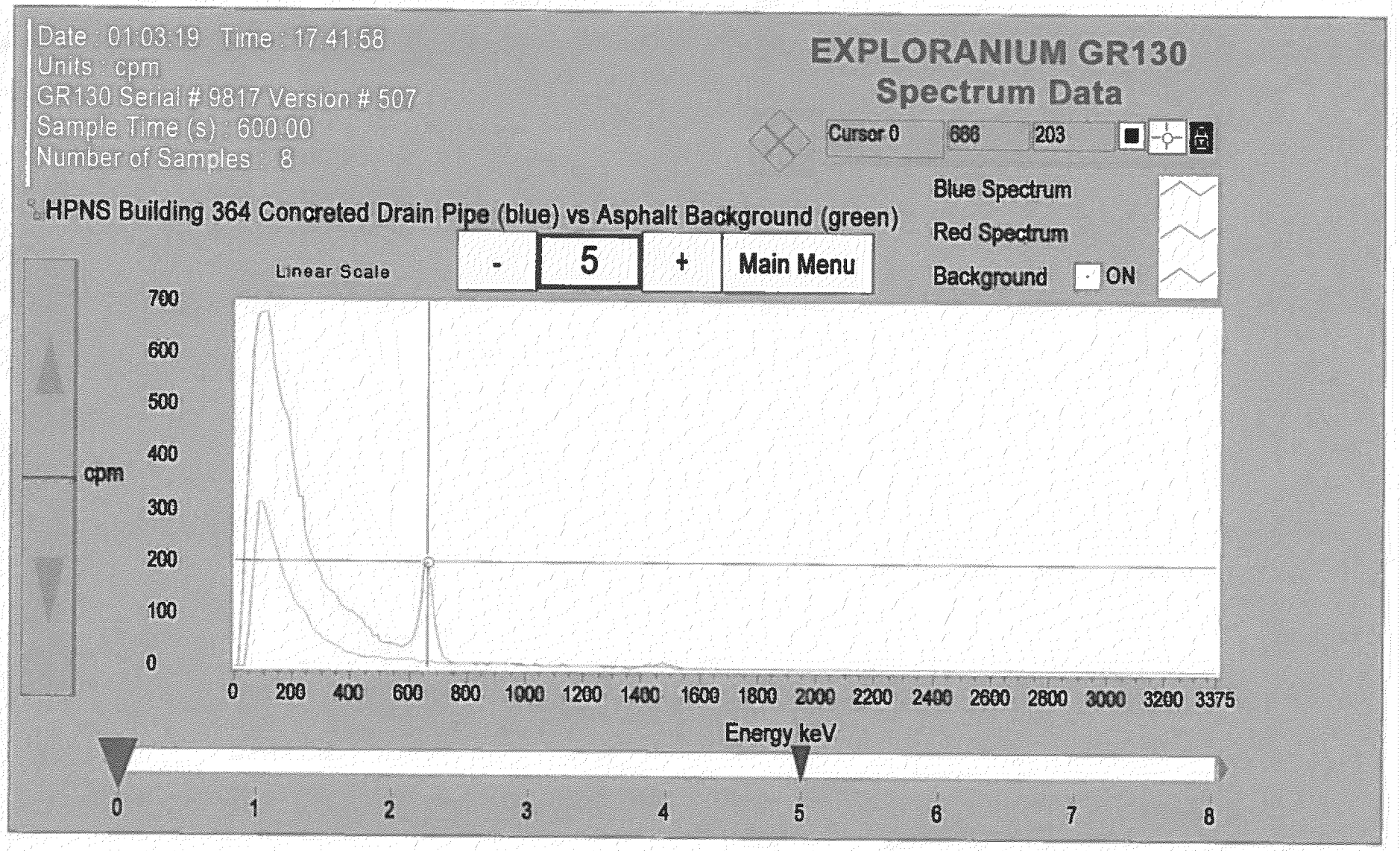
Linear Scale | - | 4 | + | Main Menu

Blue Spectrum
Red Spectrum
Background ON



ED_000855_00002122-00011

B364 Drain Pipe Spectrum Analysis



ED_000855_00002122-00013

Peanut Spill Removal Pit

Peanut Spill Removal Pit Spectrum Analysis

ED_000855_00002122-00015

Date : 01/03/19 Time : 17:54:34
Units : cpm
GR130 Serial # 9817 Version # 507
Sample Time (s) : 600.00
Number of Samples : 8

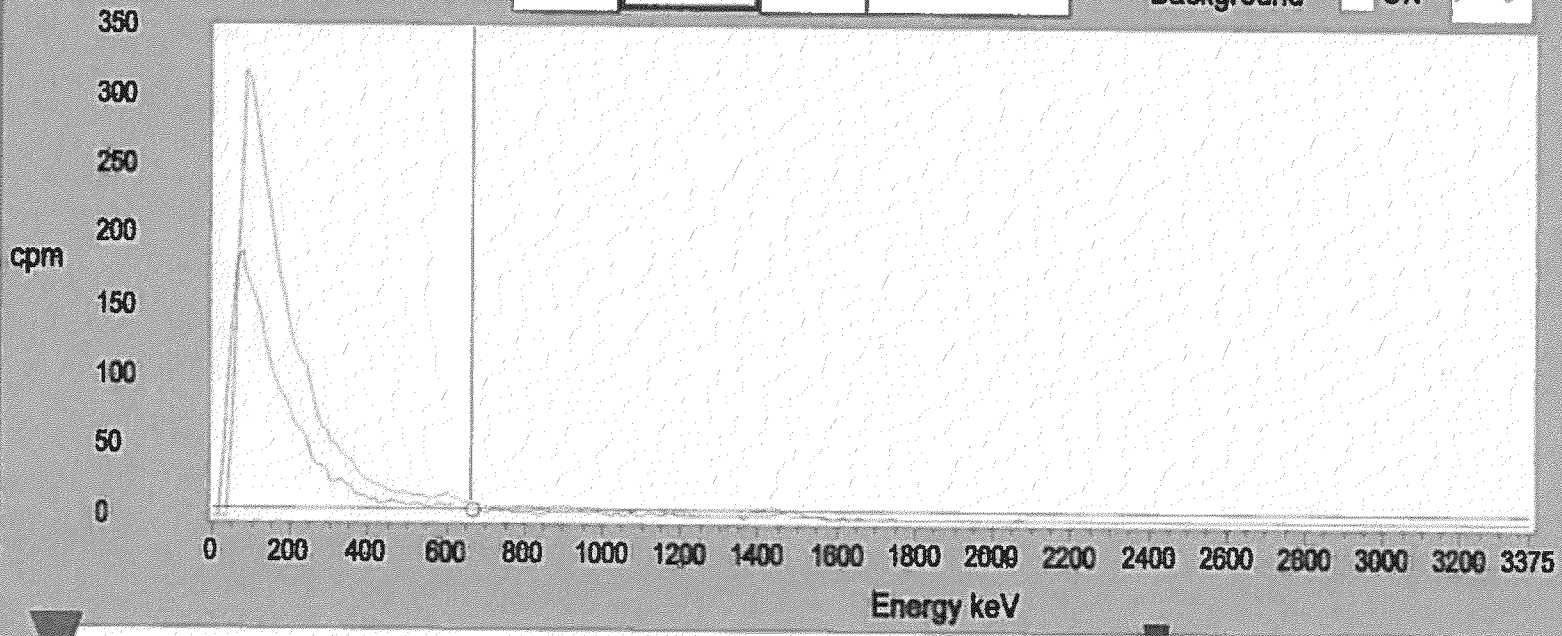
EXPLORANIUM GR130
Spectrum Data

Cursor 0 | 666 | 6

HPNS B364 Peanut Spill Removal Pit (blue) vs Asphalt Background (green)

- | 6 | + | Main Menu

Blue Spectrum
Red Spectrum
Background ON



0 1 2 3 4 5 6 7 8

ED_000855_00002122-00016

Black Beauty Sandblast Grit

ED_000855_00002122-00017

Date : 01/03/19 Time : 14:26:33
Units : cpm
GR130 Serial # 9817 Version # 507
Sample Time (s) : 1164.00
Number of Samples : 8

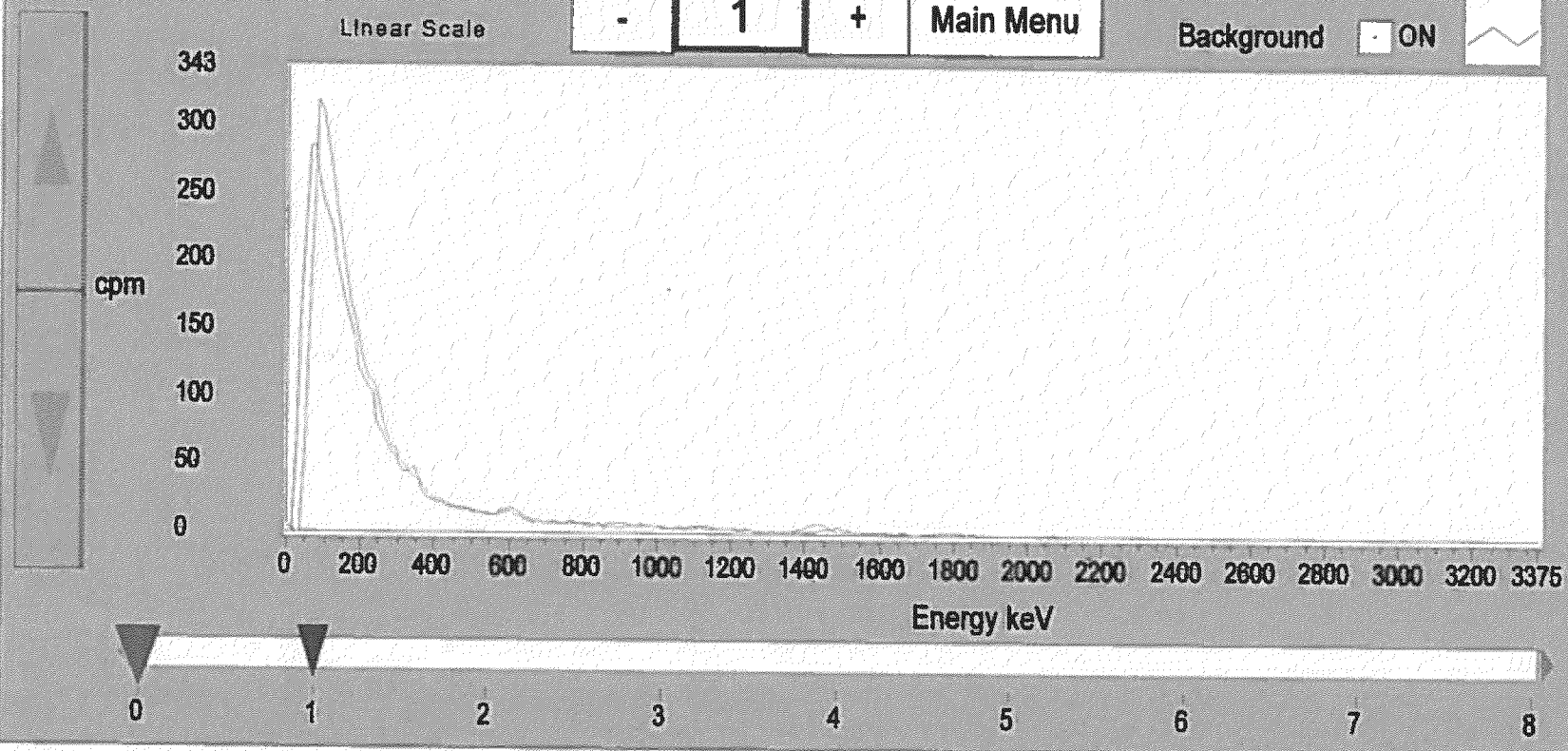
EXPLORANIUM GR130
Spectrum Data

Cursor 0 | 0 | 1

HPNS Black Beauty Sandblast Grit (blue) vs Asphalt Background (green)

Linear Scale | - | 1 | + | Main Menu

Blue Spectrum
Red Spectrum
Background ON



ED_000855_00002122-00018