
**ONONDAGA LAKE SITE
EARTHEN MATERIALS INVESTIGATION WORK PLAN
GRANBY QUARRY INVESTIGATION
JANUARY 2012**

1.0 PURPOSE AND OBJECTIVE

The Granby Quarry located in Fulton, New York has been identified as the potential primary source of earthen materials for fill and capping work associated with the Onondaga Lake Superfund project and its sub-sites. The objective of this work plan is to present the sampling approach for obtaining analytical approval for use of the earthen materials from the quarry on any existing or future Honeywell remedial projects. Chemical analysis of the soils from the quarry will be compared to the NYSDEC Subpart 375 Unrestricted Use Soil Cleanup Objectives (SCOs) for use as imported materials. Existing Honeywell projects that use the analytical results from this investigation may need to have their imported material specifications modified to eliminate the need for future analytical sampling of imported materials.

To date, approximately 200,000 tons (111,111 cubic yards) of material has been used from the Granby pit for fill on various Honeywell projects. Approximately 43 samples have been collected from these imported materials and analyzed for comparison to the analytical requirements of the NYSDEC Subpart 375 Unrestricted Use SCO. To date, there have been no exceedances of the Unrestricted Use SCO.

2.0 HEALTH AND SAFETY

Parsons' *Project Safety Plan* (PSP) (Parsons, 2008a) prepared for previous investigation activities related to Onondaga Lake projects, and updated in May 2011, will be amended and used for this investigation. If tasks are identified that fall outside the scope currently defined in the PSP, a new job safety analysis (JSA) will be completed before the task begins. Site subcontractors will also be required to submit a subcontractor safety plan (SSP) for approval prior to the start of pre-design investigation (PDI) activities. Copies of the PSP, JSAs, and SSPs will be maintained at each work area.

3.0 SAMPLE COLLECTION

To assess the quarry materials for chemical composition, up to two VOC samples and up to two composite samples for mercury, metals, SVOCs, PCBs, pesticides/herbicides, and cyanide will be collected from each sample location. Sample locations will be spaced on a two acre grid over the working surface of the quarry. Based on sampling of the quarry to date and the location and history of the quarry, contamination of this material is unlikely. As discussed in Section 1.0, 43 samples have been collected from the Granby quarry with no exceedances of the Subpart 375 Unrestricted Use SCO. The quarry is located in a rural area with no known potential sources of contamination. If an exceedance of the Subpart 375 Unrestricted Use SCO occurs during this

investigation, additional samples may be collected approximately 50 to 100 ft from around the area of exceedence to delineate materials that exceed the SCO for exclusion as a fill source. Additional sample locations for delineating exceedences will be determined with concurrence from NYSDEC.

3.1 Existing Open Pit/Phase I Areas

As shown on Figure 1, a total of 50 samples will be collected from 25 sample location within the existing pit and Phase I section of the quarry. As noted above, the sample locations are based on a 2-acre grid accounting for topographic features and to provide spatial distribution across the site. The sampling locations will be staked, marked, and surveyed using portable global positioning equipment or traditional survey equipment. Sample locations may be modified in the field to allow for access due to existing quarry activities (i.e., stockpile locations and plant operations). Modifications to the sampling locations will be made with concurrence from NYSDEC.

Soil samples will be collected consistent with the field procedures used by Parsons during the *Onondaga Lake Pre-Design Investigation: Phase I Work Plan* (Parsons, 2005). Samples will be collected with a geoprobe, drill rig, excavator, or other mechanical means on 5 ft intervals (i.e., standard sampling) until glacial till is encountered (approximately 25 ft below ground surface). Soil samples will be visually examined in the field and physical characteristics will be described using the Unified Soil Classification System.

As noted above, samples will be analyzed for NYSDEC part 375 Unrestricted Use SCOs including VOCs, SVOCs, PCBs, pesticides/herbicides, metals, and total cyanide, as summarized in Table 1. One select soil sample interval from above and one soil sample interval from below the water table (if present) will be collected at each boring or test pit location and analyzed for VOCs. VOC samples will be immediately loaded into containers provided by the analytical laboratory.

In addition, one composite sample of soils above the water table (if present) and one composite sample of soils below the water table (if present) at each boring or test pit location will be analyzed for the remainder of the NYSDEC part 375 Unrestricted Use SCO parameters. Composite samples will placed in dedicated containers or stainless steel bowls and homogenized prior to loading into containers provided by the analytical laboratory.

If the water table is not encountered during sampling, a select interval from both the upper half and the lower half of the total boring or test pit depth will be submitted for VOC analysis. Similarly if the water table is not encountered at a location, one composite sample from both the upper half and the lower half of the total boring or test pit depth will be submitted for the analysis of the remaining part 375 Unrestricted Use SCO parameters.

Sampling activities are scheduled to begin in approximately mid-March or when weather conditions allow. The samples will be stored and shipped on ice to the analytical laboratory following chain of custody procedures. Select composite samples may also be analyzed for grain size to assess grain size distribution.

If non-dedicated sampling equipment is used, the equipment will be decontaminated between samples by washing equipment with an Alconox® solution followed by a deionized (DI) water rinse. Equipment will then be rinsed with a 10% nitric acid solution, rinsed again with DI water, followed by a rinse with a 10% methanol solution and rinsed again with DI water. The equipment will then be air dried.

Samples will be extracted and analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) certified laboratory. Analyses will be performed in accordance with NY State ASP Category B. A matrix spike, matrix spike duplicate, field duplicate, and field blank sample will be collected and analyzed for each sample delivery group of up to 20 total samples.

The analytical program will use the data quality objectives and quality assurance objectives that are described in the Geddes Brook Construction QAPP (Parsons, 2011). USEPA Level IV data validation will be conducted on 10 percent of the samples (i.e., full data validation) and a USEPA Level III data validation will be conducted on the remaining 90 percent of the samples. Data validation will be conducted by a third party not associated with the laboratory that performed the analyses.

4.0 REPORTING

Following laboratory analysis and data validation, sample locations, sample depths, field observations, and laboratory results with data validation qualifiers will be summarized. Results from the soil analytical samples will also be electronically submitted to NYSDEC upon validation and review.

5.0 PHASE II/FUTURE INVESTIGATIONS

The Phase II area (approximately 18 acres), and potential future areas that may be consolidated into the quarry, will also be investigated, as described above, prior to the start of quarry activities in those areas. The quarry owner may potentially sample locations in this area, which also may be supplemented by additional borings/test pits, as described above. Future scopes of work will be provided as addenda to this Work Plan.

6.0 CITED REFERENCES

- Parsons. 2005b. *Onondaga Lake Pre-Design Investigation Work Plan*. Prepared for Honeywell, Morristown, New Jersey. Syracuse, New York. Appendix B of Phase I Pre-Design Investigation Work Plan. September 2005.
- Parsons. 2008a. *Project Safety Plan*. Prepared for Honeywell, Morristown, New Jersey. Syracuse, New York. Updated May 2011..
- Parsons. 2011. *Geddes Brook Construction Quality Assurance Project Plan*. Prepared for Honeywell, Morristown, New Jersey. Syracuse, New York. Appendix B of Phase I Pre-Design Investigation Work Plan. April 2011

FIGURE

TABLE

Table 1
Granby Quarry Investigation
Analytical Summary

Sample Location ID	Analytical Testing ¹								Geotechnical Testing
	Mercury	TAL Metals	VOCs ²	SVOCs	Pesticides	Herbicides	PCBs	Cyanide	Grain Size
GPit-SB-001	2	2	2	2	2	2	2	2	2
GPit-SB-002	2	2	2	2	2	2	2	2	2
GPit-SB-003	2	2	2	2	2	2	2	2	2
GPit-SB-004	2	2	2	2	2	2	2	2	2
GPit-SB-005	2	2	2	2	2	2	2	2	2
GPit-SB-006	2	2	2	2	2	2	2	2	2
GPit-SB-007	2	2	2	2	2	2	2	2	2
GPit-SB-008	2	2	2	2	2	2	2	2	2
GPit-SB-009	2	2	2	2	2	2	2	2	2
GPit-SB-010	2	2	2	2	2	2	2	2	2
GPit-SB-011	2	2	2	2	2	2	2	2	2
GPit-SB-012	2	2	2	2	2	2	2	2	2
GPit-SB-013	2	2	2	2	2	2	2	2	2
GPit-SB-014	2	2	2	2	2	2	2	2	2
GPit-SB-015	2	2	2	2	2	2	2	2	2
GPit-SB-016	2	2	2	2	2	2	2	2	2
GPit-SB-017	2	2	2	2	2	2	2	2	2
GPit-SB-018	2	2	2	2	2	2	2	2	2
GPit-SB-019	2	2	2	2	2	2	2	2	2
GPit-SB-020	2	2	2	2	2	2	2	2	2
GPit-SB-021	2	2	2	2	2	2	2	2	2
GPit-SB-022	2	2	2	2	2	2	2	2	2
GPit-SB-023	2	2	2	2	2	2	2	2	2
GPit-SB-024	2	2	2	2	2	2	2	2	2
GPit-SB-025	2	2	2	2	2	2	2	2	2

Notes:

1. One samples from above the water table (if present) and one sample from below the water table (if present) will be collected and analyzed for parameters listed on this table. If the water table is not encountered one sample from the top half and one sample from the bottom half of the total boring or test pit depth will be submitted for analysis.

2. A select interval from above and below the water table (if present) will be submitted for VOC analysis. If the water table is not encountered a select interval from the top half and a select interval from the bottom half of the total boring or test pit depth will be submitted for VOC analysis.