(GAL) established in the Technical Administrative Guidance Memorandum TAGM 3028,[1] "Contained-In" Criteria For Environmental Media, November 30, 1992, revised March 1997; and the Recommended Soil Cleanup Objectives (RCO) listed in TAGM HWR-94-4046, Determination of Soil Cleanup Objectives and Cleanup Levels, revised January 1994.

PAH values were compared to a baseline value of 10 ppm. Site baseline levels for inorganics were calculated by using the midpoint of the range from the "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States Study," by Shacklette and Boerngen (1984). In addition, if any single value of an organic constituent was reported as a "non-detect" (ND), a value equal to 1/2 of the USEPA SW-846 PQL was assigned to that constituent. TAGM 3028 was selected because it utilizes the same methodology used by the U.S. Environmental Protection Agency in developing soil ingestion action levels in the proposed Subpart S rule (55 FR 30798, July 27, 1990). TAGM 4046 RCO levels are obtained from the US EPA's Health Effects Assessment Summary Tables (HEASTS) and/or site background values and are the basis for determining acceptable soil concentration levels assuming future residential use of the land. Any future changes to criteria that is used to

[1] As agreed between Kodak and the NYSDEC some of the footnotes to the TAGM 3028 document were not incorporated into the EMP II because their effect was considered to be insignificant or not applicable.

develop the current SMZs (i.e. PQL, TAGM, analytical methodologies, values, etc.) must be acceptable to both Kodak and the NYSDEC.

A series of soil management maps were created for each park section indicating which grids contained soil that was above and/or below PQL, site baseline, TAGM 3028 SIL, GAL and TAGM 4046 RCO. Each of the grids within the SMA has been classified as one of four soil management zones based on process knowledge, site history information and analytical data. The four categories of soil management zones are "green", "yellow" "red" and "white" or uncharacterized. The zone designation of a grid is subject to change if new soil samples are collected within that area and the analytical results indicate that the levels of constituents within that area have changed.

The following subsections discuss the criteria that establishes whether a zone is green, yellow, red, or white.

4.2.1 GREEN SOIL CLASSIFICATION

By using process knowledge, site history information and/or analytical data, zones classified as "green" must meet the following criteria:

- Average value for each PAH at or below 10 ppm, and

- Average organic soil constituent levels less than TAGM 4046 RCO or PQL and average inorganic soil constituent levels less than site baseline or TAGM 4046 RCO; or
- Average organic and inorganic soil constituent levels less than TAGM 3028 SIL and toxicity characteristic leachate procedure (TCLP) results less than TAGM 3028 GAL.[2]

4.2.2 YELLOW SOIL CLASSIFICATION

By using process knowledge, site history information and/or analytical data, zones classified as "yellow" must meet the following criteria:

- Average value for each PAH at or below 10 ppm, and
- Average organic soil constituent levels greater than TAGM 4046 RCO and PQL or average inorganic soil constituent levels greater than site baseline or TAGM 4046 RCO; and
- Average organic and inorganic soil constituent levels less than TAGM 3028 SIL but TCLP results are greater than TAGM 3028 GAL.[2]

4.2.3 RED SOIL CLASSIFICATION

By using process knowledge, site history information and/or analytical data, zones classified as "red" must meet the following criteria:

- Average value for any PAH greater than 10 ppm, or

[2] If TCLP data is not available, then total concentration data will be compared to 20X TAGM 3028 GAL.
[2]If TCLP data is not available, then total concentration data will be compared to 20X TAGM 3028 GAL.

- Average organic soil constituent levels greater than TAGM 4046 RCO and PQL or average inorganic soil constituent levels greater than site baseline or TAGM 4046 RCO; and
- Average organic or inorganic soil constituent levels greater than TAGM 3028 SIL.

4.2.4 UNCHARACTERIZED ZONES

If process knowledge, site history information, and/or analytical data is not available, the zone is considered "white". When analytical testing is conducted on soil within a "white" zone, it will be reclassified as a "red", "yellow", or "green" zone, as per Sections 4.2.1-4.2.3.

4.3 SOIL EXCAVATION PHASE

Excavated soil may be managed by either of two alternatives. 1) Soil suitable for backfill will be used to the maximum extent practical (e.g. backfilled, graded, bermed, landscaped) within the original excavation site. 2) Excess soil which cannot be backfilled will be sent to a KP soil storage facility while awaiting redistribution. (Figure 2 outlines the excavation phase.)

4.3.1 PROJECT SITE BACKFILL

Routine excavation activities conducted within the SMZs may be backfilled provided the soil is not visually contaminated and has an OVA reading <1000 PPM (or 100 PPM for "green" soil). Soil will be backfilled as soon as construction activities permit. This soil can be temporarily stockpiled adjacent to, or as close as practical to the excavation site. Soil that is not backfilled will be removed from the project site within 60 days of completion of field activities.

4.3.2 SOIL STAGING AREA (SSA)

Excess generated soil which is not backfilled, bermed, graded, or landscaped within the original excavation site will be initially classified according to the procedures listed in Section 4.2. Soil can be placed in luggers, backhoes, trucks, etc., for the purpose of transporting material to another similarly classified receiving area, or if a site is not immediately available to accept soil, the soil will be transported to one of two soil staging areas (SSA).

One SSA is located in KPW at the former Building 145 site. It is a controlled facility within KP with the capability of testing, passively dewatering, and storing of soils initially classified as "white," "yellow," or "red". In addition, excess soil initially classified as "green" which has an OVA reading greater than 100

ppm will be managed at this facility. This site has been chosen as an SSA due to its central location, the industrial sewer connections, and the KPW migration control system as operated under the KPW CMS.

Soils managed at the KPW SSA will require analytical verification prior to redistribution. "Green" soil with an OVA reading greater than 100 ppm will be analyzed for constituents contained in the 8240/8260 Target Compound List following procedures established in the CQS-ETCM-QM-0001 methodology. "Yellow," "red" and "white" SSA piles will be analyzed for constituents contained in the Target Compound List (Methods 8240/8260, 8270, 8015, 9010, and 6010/7000 series) following protocols established in the CQS-ETCM-QM-0001 methodology. The pile(s) will be sampled at a frequency of 50 cubic yards, or one sample quarterly, whichever results in the greater number of samples. Samples will be composited as described in Attachment 1. Analytical results of the SSA piles will be compared against the EMP II soil classification criteria as stated in Sections 4.2.1 – 4.2.3. These analytical results will be used to determine the compatibility with a receiving area of the same or higher zone classification (see Figure 3).

The second site is located in KPS. This area is used to store excess "green" soil (OVA less than 100 ppm). "Green" soil stored in the

KPS SSA does not require additional analysis prior to redistribution.

Records will be maintained at both SSAs to allow Kodak to manage the soil piles and account for soil received and redistributed. The "white," "yellow," and "red" SSA piles will be located on asphalt/concrete.

Kodak will secure approval from the NYSDEC prior to using any new area as a "red" or "yellow" SSA.

4.4 SOIL REDISTRIBUTION PHASE

The redistribution phase consists of the placement of classified soils into an appropriate receiving area. Any zone within the SMA which has a need for additional soil can be designated as a receiving area. Figure 3 outlines the Redistribution Phase.

Soil initially classified as "green" will be suitable for redistribution at any location within KP without additional analytical testing, provided the OVA reading is less than 100 ppm. "Green" soil with an OVA reading greater than 100 ppm will require analytical verification prior to redistribution. In addition, soils initially classified as "white," "yellow," or "red" will require analytical verification prior to redistribution.

If the receiving area lies within a zone which is not classified as per the soil zone management criteria established in Section 4.2 ("white"), then only soil classified as "green" (Section 4.2.1) can be redistributed in this area.

4.4.1 REDISTRIBUTION FROM GREEN SSA PILE

If a pile in the SSA, after sampling, meets the criteria established in Section 4.2.1, that soil is reclassified as "green" and can be redistributed within any SMZ.

4.4.2 REDISTRIBUTION FROM YELLOW SSA PILE

If the pile meets the criteria established in Section 4.2.2, that soil is classified as "yellow". Soils from a "yellow" SSA pile can be redistributed in a "yellow" or "red" receiving area only if all organic constituents detected in the pile are similar in nature and not greater than 200% (or 2x) of those same constituents within the receiving area. The 200% comparison applies only for individual constituent levels measuring greater than 50 PPM.

4.4.3 REDISTRIBUTION FROM RED SSA PILE

If the pile meets the criteria established in Section 4.2.3, that soil is classified as "red". Soils from a SSA pile designated as "red" may be redistributed in a "red" receiving area only if all organic constituents detected in the pile are similar in nature and not greater than 200% (or 2X) of those same constituents within the receiving

area. Again, the 200% comparison only applies for individual constituent levels measuring greater than 50 PPM.

4.5 MANAGEMENT OF MAJOR EXCAVATIONS

On occasion, Kodak will undertake large projects where significant amounts of excess soil will be generated. In those cases where greater than 250 cubic yards, but less than 1000 cubic yards of excess soil is initially expected to be generated, precharacterization of the specific project area will be conducted using existing and/or new soil samples in order to facilitate management of the excavated soil. For each 100 linear feet, one sample will be collected over the total depth of the excavation.

If 1000 cubic yards or greater of excess soil is generated from a single project, Kodak will submit a sampling and analysis plan to the NYSDEC for their review and approval prior to commencing precharacterization activities.

Analytical results of this sampling will be compared against the EMP II soil classification criteria as stated in Sections 4.2.1 – 4.2.3. These analytical results will be used to determine the compatibility with a receiving area of the same or higher zone classification (see Figure 3). Soil that is pre-characterized may be shipped directly to a compatible receiving area.

4.6 ON-SITE TREATMENT

If any SSA pile cannot be redistributed for any reason, then Kodak reserves the option to provide on-site treatment as discussed herein, or off-site treatment and/or disposal as outlined in Section 5. The Building 218 Chemical Waste Incinerator is the only facility that exists at KP at this time that is permitted to treat hazardous and/or non-hazardous material. Operations are permitted under the Federal RCRA Part B Permit No. NYD980592497 for the treatment of hazardous waste. Presently, the incinerator is capable of treating only a minimal amount of soil due to feed restrictions and ash handling issues.

5.0 OFF-SITE MANAGEMENT

Soil which is visually contaminated or does not meet the requirements of on-site zone management will be managed at a permitted off-site facility for treatment and/or final disposition. Any soil transported to an off-site treatment or disposal facility will meet the requirements of the accepting solid or hazardous waste management facility.

5.1 EXCAVATED MATERIAL CLASSIFICATION FOR OFF-SITE DISPOSAL

Excavated material which has been determined to require off-site management will be tracked from initial excavation through final disposition. Classification for off-site management is based on soil analytical results and process knowledge. Soil that cannot be backfilled or otherwise redistributed within the SMA will be classified as non-hazardous or hazardous waste and stored, treated, and disposed of in accordance with applicable regulations.

Soil will be classified as hazardous waste if constituents contained in the soil originate from a known source of hazardous waste and/or if the soil exhibits hazardous characteristics in accordance with 6NYCRR Part 371. Soil will otherwise be classified as non-hazardous waste if it does not meet

the criteria for classification as a hazardous waste and managed in accordance with Part 360.

5.1.1 CLASSIFICATION AS HAZARDOUS WASTE

For soil requiring management off-site, each quantifiable constituent in the soil will be evaluated to determine the likely origin of the constituent. The evaluation includes, but is not limited to, a review of the project site history, current use of the area, and the Kodak incident data base. Once a known source of hazardous waste is verified to be contained in the soil, the proper waste code(s) will be assigned and the soil will be managed at a hazardous waste facility.

5.1.2 CLASSIFICATION AS NON-HAZARDOUS WASTE

Soil that is classified as non-hazardous may be disposed of in a 6NYCRR Part 360 facility if:

- the soil is not hazardous pursuant to 6NYCRR Part 371; and
- the soil is not otherwise prohibited by the facility.

5.2 STORAGE

Locations used to store soil that does not meet the redistribution requirements of EMP II can be stored at any acceptable location within Kodak Park. These locations may include, but are not limited to permitted hazardous waste storage areas, less than 90 day accumulation area, and the KPW SSA.

5.3 TREATMENT

Soil defined as hazardous waste which exceeds applicable land disposal restrictions requires treatment of the soil prior to disposal at a permitted facility. Kodak may elect to treat soil containing listed hazardous waste(s) or exhibiting hazardous waste characteristic(s) at a permitted off-site facility.

5.4 DISPOSAL

Soil that is visually contaminated, or cannot be returned to the original excavation or redistributed within an appropriate receiving area may be disposed of at a permitted off-site facility. Materials sent for disposal will meet applicable State and Federal regulatory and analytical requirements.

6.0 QUALITY ASSURANCE THROUGH PROJECT CONTROLS

6.1 PURPOSE

Kodak has established project controls to attain quality assurance throughout the EMP II. In addition to project controls, the data management process requires appropriate documentation necessary to insure environmental and health and safety compliance. These documents create an audit trail of each process. The soil management program is comprehensive and requires consistent adherence to approved protocols. Proper record keeping, reporting, and control of documents are integral to the quality assurance objectives of this program.

6.2 QUALITY ASSURANCE

Work performed for general excavations under the direction of the Soil Management Group will follow the specifications outlined in the Soil Management Group Standard Operating Procedures Manual. The manual assures that activities pertaining to excavation projects will:

- require the use of approved methods and criteria,
- ensure consistent procedures will be followed and,
- confirm the quality of work performed.

The manual ensures that the soils program will be conducted according to proper standards and methods consistent with this plan.

6.3 RECORD-KEEPING AND DOCUMENT CONTROL

Records generated during implementation of the EMP II will be maintained by Kodak. The records will include:

- project procedures, requirements, and specifications
- sampling collection log/chain of custody
- analytical results
- field activity logs/testing data and results
- health and safety records
- excavation and redistribution records
- documentation of soil moving into and out of the SSA piles
- documentation of soil disposition

Records will be maintained during implementation of the EMP II through completion of the entire RCRA Corrective Action Program.

6.4 REPORTING

Kodak will submit an annual report to the NYSDEC which will include the following:

- estimated total volume of excavated soil
- estimated total volume of soil backfilled at the excavation sites
- volume and origin of soil moved to the SSA piles; red, yellow, green, and white
- analytical results of the SSA pile sampling
- volume and destination of material leaving the SSA piles
- volume of any soil being used as fill in basements or other surface structures, and
- revised SMZ maps to reflect changes in data, if any
- redistribution compatibility tables, if applicable
- location and volume of visually contaminated or high OVA soil

6.5 CHANGES TO THE EMP II

As situations arise, Kodak may need to revise the EMP II. Changes in technology, NYSDEC regulations, and other factors could dictate updates to the plan. In the event that there is a need to modify or revise the EMP II, Kodak will submit proposed revisions to the NYSDEC for review and approval. Any such changes to the EMP II will not be implemented until they are approved by the NYSDEC.

7.0 DEFINITIONS AND ABBREVIATIONS

7.1 DEFINITIONS

- Backfill- soil which is backfilled, bermed, graded, or landscaped within 150 feet of the original excavation/project site.
- Excess soil - soil which is not backfilled in or at the original excavation/project site.
- Minor excavation - excavations which pose minimal environmental impact (e.g., road repair, fence pole installation, landscaping) and those projects with less than 3 feet in depth and less than 5 cubic yards of soil provided all soil is backfilled at the excavation/project site.
- Receiving area - an area which is able to accept soil generated from another excavation site.
- Redistribute - soil that is placed in a receiving area provided redistribution criteria is met.

7.2 ABBREVIATIONS

- EMP II - Excavation Master Plan (revised)
- FID - Flame Ionization Detector
- GAL - Groundwater Action Level
- HEAST - Health Effects Assessment Summary Table
- KPCAP - Kodak Park Corrective Action Program
- NYCRR - New York Code Rules and Regulations
- NYSDEC - New York State Department of Environmental Conservation
- OVA - Organic Vapor Analyzer
- PID - Photoionization Detector

- PQL - Practical Quantitation Limits
- PPM - Parts Per Million
- RCO - Recommended Cleanup Objectives
- RCRA - Resource Conservation and Recovery Act
- RFI - RCRA Facility Investigation
- SMA - Soils Management Area
- SMZ - Soil Management Zone
- SSA - Soil Staging Area
- SWMU - Solid Waste Management Unit
- TAGM - Technical Administrative Guidance Memorandum

8.0 REFERENCES

- "Inactive Hazardous Waste Disposal Site Remedial Program," 6 NYCRR Part 375.
- "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States," H. T. Shacklette and J. G. Boerngen, U. S. Geological Survey Professional Paper 1270, 1984.
- "Interim Status Standards For Owners and Operators of Hazardous Waste Facilities," 6 NYCRR Part 373.
- "Solid Waste Management Facilities," 6 NYCRR Part 360.
- Technical Administrative Guidance Memorandum, TAGM HWR-94-4046, Determination of Soil Cleanup Objectives and Cleanup Levels, January, 1994.
- Technical Administrative Guidance Memorandum, TAGM 3028, "Contained-In" Criteria for Environmental Media, November 30, 1992, revised March 14, 1997.
- USEPA Subpart S (55FR30798, July 27, 1990).
- "CQS-ETCM-QM0001, Quality Assurance Program Manual," Eastman Kodak Company, Rochester, New York.