OPERABLE UNIT 2 OF THE GENERAL MOTORS – INLAND FISHER GUIDE
SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE
RECORD OF DECISION

APPENDIX V-b

PUBLIC NOTICE PUBLISHED IN THE
SYRACUSE POST STANDARD
ON JANUARY 15, 2015

Notices

Other Legals

al. Defendant(s): Attorney (s) for Plaintiff (s): ROSICKI, ROSICKI & ASSOCIATES, P.C. 2 Summit Court, Suite 301 Fishkill, New York 12521 845.897.1600 Pursuant to judgment of foreclosure and sale granted herein on or about May 2, 2014 I will sell at Public Auction to the highest bidder at West Lobby 2nd floor Courthouse, 401 Montgomery Street, Syracuse, NY 13202 On February 10, 2015 at 9:00 AM Premises known as 700 OAK ST SYRACUSE, NY 13203 Section 19 Block 5 Lot 10 All that tract or parcel of land situate in the City of Syracuse County of Onondaga and State of New York, known and distinguished as Lot No. 7 of Block No. Four hundred fifty six (456) of said City, according to a map of said premises made by R. Griffin C.E. and filed by Joseph T.M. Meagryard, George H. Dean and George H. Mann, in Onondaga County Clerk's Office March 18, 1890, said lot being thirty nine (39) feet wide on Oak Street and having a depth of One Hundred and thirty two (132) feet. Also all that other tract or parcel of land, being part of Lot No. Six (6) in Block No. Four Hundred fifty six (456) As more particularly described in the judgment of foreclosure and sale. Said subject to all of the terms and conditions contained in said judgment and terms of sale. Approximate amount of judgment $126,871.16 plus interest and costs. INDEX NO. 2013-0981 RALPH DEMASI, ESQ. REFEREE

NOTICE OF SALE SUPREME COURT ONONDAGA COUNTY WELLS FARGO BANK, N.A. Plaintiff(s) vs. KRISTINE P. FLEURY, et al. Defendant(s) Attorney (s) for Plaintiff: ROSICKI, ROSICKI & ASSOCIATES, P.C. 2 Summit Court, Suite 301 Fishkill, New York, 12524 845.897.1600 Pursuant to judgment of foreclosure and sale granted herein on or about October 23, 2014 I will sell at Public Auction to the highest bidder at Second Floor of the Onondaga County Courthouse, 401 Montgomery Street, Syracuse, New York 13202 On February 2, 2015 at 10:00 AM Premises known as 6522 CANTON STREET, WARNERS, NY 13164 Section 53 Block 3 Lot 1 ALL THAT TRACT OR PARCEL OF LAND situate in the Town of Van Buren, County of Onondaga and State of New York and being part of Great Lot #40 in said Town. As more particularly described in the judgment of foreclosure and sale. Sold subject to all of the terms and conditions contained in said judgment and terms of sale. Approximate amount of judgment $114,457.74 plus inter-

Other Legals

certified D/M/WBE firms to send quotes for services and/or supplies. Plans are available through the NYS DOT website at WWW.dot.ny.gov (doing business opportunities, const.notices) or call our office at 607-756-2819. Please fax quotes to 607-756-4742 or email to gump@economypaving.com. We are an equal opportunity employer

N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND U.S. ENVIRONMENTAL PROTECTION AGENCY EXTEND PUBLIC COMMENT ON THE PROPOSED PLAN FOR OPERABLE UNIT 2 OF THE GENERAL MOTORS IN-LAND FISHER GUIDE SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE TOWN OF SALINA ONONDAGA COUNTY, NEW YORK The N.Y.S. Department of Environmental Conservation and the U.S. Environmental Protection Agency have issued a Proposed Plan for addressing contamination at Operable Unit 2 of the General Motors Inland Fisher Guide subsite of the Onondaga Lake Superfund site and have extended the comment period to February 14, 2015. Written comments on the Proposed Plan should be mailed (postmarked) to Richard Mustico, Project Manager, N.Y.S. Department of Environmental Conservation, Division of Environmental Remediation, 625 Broadway, Albany, NY 12233-7013 or e-mailed to richard.mustico@dec.ny.gov no later than February 14, 2015. The preferred cleanup plan outlined in the Proposed Plan consists of excavation of contaminated creek sediment, excavation of contaminated soil in the vicinity of the creek, off-site disposal of the excavated material, restoration of all of the remediated areas, development of a site management plan, institutional controls and long-term monitoring. The Proposed Plan and other site related documents are available for public review at the following locations: Salina Library, 100 Belmont Street, Mattydale, NY 13211, Phone: 315-454-4524; NYSDEC, 615 Erie Blvd. West, Syracuse, NY 13204, Phone: 315-426-7400. Please call for an appointment. NYSDEC Attn: Richard Mustico, 625 Broadway, Albany, NY 12233-7013, Phone: 518-402-9676, (Richard.Mustico@dec.ny.gov) Atlantic States Legal Foundation Attn: Samuel Sage, 658 West Onondaga Street, Syracuse, NY 13204, phone: 315-475-1170. Please call for an appointment. The Proposed Plan is also available online at http://www.dec.ny.gov/docs/remediation_hudson_pdf/734057ou2pmfp.pdf

Please take notice that the regular meetings for the Jaqeswille Fire

Other Legals

SYRACUSE, and JOHN DOE, Defendants. To the above named Defendants: You are hereby summoned to answer the complaint in this action and to serve a copy of your answer, or if the complaint is not served with this summons, to serve a notice of appearance on the plaintiff's attorneys within thirty days after the service of this summons, exclusive of the day of service, and in case of your failure to appear or answer, judgment will be taken against you by default for the relief demanded in the complaint. NOTICE YOU ARE IN DANGER OF LOSING YOUR HOME If you do not respond to this summons and complaint by serving a copy of the answer on the attorney for the mortgage company who filed this foreclosure proceeding against you and filing the answer with the court, a default judgment may be entered and you can lose your home. Speak to an attorney or go to the court where your case is pending for further information on how to answer the summons and protect your property. Sending a payment to your mortgage company will not stop this foreclosure action. YOU MUST RESPOND BY SERVING A COPY OF THE ANSWER ON THE ATTORNEY FOR THE PLAINTIFF (MORTGAGE COMPANY) AND FILING THE ANSWER WITH THE COURT. This is an attempt to collect a debt and any information obtained will be used for that purpose. The foregoing summons is served upon you by publication pursuant to an order of Honorable Donald A. Greenwood, Justice of the Supreme Court of the State of New York, signed the 18th day of December, 2014 at Onondaga County, New York. Property Address: 331 Park Street, Syracuse, NY 13203 Tax I.D. No. 015-12-14.0 ALL that tract or parcel of land situate in the City of Syracuse, County of Onondaga and State of New York, being known and distinguished as Lot Number three (3) of the Price Tract, in Block Number Four Hundred fifty five (455) of the City of Syracuse, New York, as the same is laid out on a map of said tract made by Allen, Farrington & Co. and filed in the Onondaga County Clerk's Office July 1st, 1896 as Map No. 897 said lot being forty-four (44) feet front on Park Street, the same in the rear, and one hundred thirty two (132) feet deep. Subject to easements, covenants, and restrictions of record

SUPPLEMENTAL SUMMONS Index No. 2014-1352 STATE OF NEW YORK SUPREME COURT COUNTY OF ONONDAGA HSBC BANK USA, N.A. Plaintiff, vs. THE HEIRS AT LARGE OF

STATEMENT OF OFFICIAL CANVASS AND DETERMINATION OF ELECTION

We, the Board of County Canvassers of the County of Onondaga, New York, having met at the Office of the Commissioners of Elections of said County at 1000 Erie Blvd West in the City of Syracuse, New York on the 25nd day of November, 2014 and canvassed the votes given in the several election districts of said county at the General Election held on the 4th day of November, 2014, do hereby certify that the total number of votes cast in the County of Onondaga, City of Syracuse and the various towns of Onondaga County, for the offices hereafter set forth, are as follows and we do further certify, determine and declare that the hereafter named person so designated were duly elected to office hereafter set forth and we further do hereby certify that the total number of votes cast in the County of Onondaga specified for the ballot proposals hereafter set forth and the number of votes cast for each is as follows, to wit:

MEMBER OF ASSEMBLY - 127th DISTRICT

Albert A Stripe Jr (D,WF)	23220	(Elected)
Robert J DeMarco (R,C,I)	20814	
Write Ins	38	

MEMBER OF ASSEMBLY - 128th DISTRICT

Sam Roberts (D,WF)	19241	(Elected)
John W Sharon (R,C,I)	14818	
Write Ins	38	

MEMBER OF ASSEMBLY - 129th DISTRICT

William B Magnarelli (D,WF,I)	19788	(Elected)
Richard G Zaccana (R,C)	7652	
Write Ins	42	

ONONDAGA COUNTY SHERIFF

Toby Shelley (D)	61643	
Gene Conway (R,C,I)	69945	(Elected)
Write Ins	176	

CITY OF SYRACUSE CITY COURT JUDGE

Ross P Andrews (D,WF)	22097	(Elected)
Write Ins	210	

TOWN OF CAMILLUS - TOWN COUNCILOR 4th WARD (To Fill Vacancy)

Steven C James (R,C,I)	1312	(Elected)
Write Ins	20	

TOWN OF CICERO TOWN JUSTICE

Douglas M DeMarche II (R,C,I)	7873	(Elected)
Write Ins	50	

TOWN OF DEWITT - TOWN CLERK (To Fill Vacancy)

Angela Epolito (D)	4744	(Elected)
Karen A Beseth (R,I)	3705	
Write Ins	1	

TOWN OF ELBRIDGE - TOWN JUSTICE

George L Betts (D,R,C,I)	1648	(Elected)
Write Ins	1	

TOWN OF GEDDES - TOWN COUNCILOR (To Fill Vacancy)

Michael Maloney (D)	2513	
James L Jerome (R)	2647	(Elected)
Write Ins	12	

TOWN OF LAFAYETTE - TOWN COUNCILOR (To Fill Vacancy)

Melanie J Palmer (R,I)	1495	(Elected)
Write Ins	9	

TOWN OF MARCELLUS - TOWN COUNCILOR (To Fill Vacancy)

Christopher P Hunt (R,C,I)	2094	(Elected)
Write Ins	35	

TOWN OF OTISCO TOWN CLERK (To Fill Vacancy)

Linda L Vanderhoof (R)	712	(Elected)
Write Ins	19	

TOWN OF OTISCO TOWN COUNCILOR (To Fill Vacancy)

Peter J Murphy (R)	723	(Elected)
Write Ins	4	

VILLAGE OF CAMILLUS TRUSTEE (To Fill Vacancy)

Susan J Hines (CAM)	200	(Elected)
Samuel A Maxsween (VIL)	67	
Write Ins	5	

TOWN OF TULLY PROPOSITION YES 580 NO 454 (Adopted)

WITNESS our hands and Official Seal of the Office of the Board of Elections in Onondaga County, New York, this 25th day of November 2014

Helen Kiggins Walsh
Dustin M Czarny
Commissioners of Elections and
Members of the County Board of Canvassers
Onondaga County, New York

OPERABLE UNIT 2 OF THE GENERAL MOTORS – INLAND FISHER GUIDE
SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE
RECORD OF DECISION

APPENDIX V-c

PUBLIC MEETING SIGN-IN SHEETS

GM-IFG PRAP
Public Meeting
12/2/14

Name	Affiliation
Clare Leary	RACER
Carl Garvey	RACER
BRENDAN MULLEN	RACER
Brendan Pilawski	Progressive Waste
Julia Braunmueller	Palmerton Group
Judy Rank	RACER
DAN GEORGE	NRC
Doug Crawford	O'Brien + Gere
Aimee Cunningham	OLWP
MARK WESTCOTT	BEHAN
Laura Moran	Hiscock + Barclay LLP
ROBERT PAPWORTH	NATURE CONSERVANCY
STEVE MULONEY	OBRIEN & GERE
Michael Bliss	NRC
Jack Ramsden	CPWG
MARK NIOTRA	Town of Salina
CHAD GENEMR	NRC
DAN GEORGE	NRC

OPERABLE UNIT 2 OF THE GENERAL MOTORS – INLAND FISHER GUIDE
SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE
RECORD OF DECISION

APPENDIX V-d

NOVEMBER 17, 2014 PUBLIC MEETING TRANSCRIPT

IN THE MATTER OF:

Remedy Proposed for Operable Unit 2

General Motors - Inland Fisher Guide plant and Ley Creek

a Subsite of the Onondaga Lake Superfund Site

Public Meeting

December 2, 2014

6:00 p.m.

Salina Town Hall
201 School Road
Liverpool, New York 13088

Eileen McDonough, RPR, CRR
Official United States Court Reporter
P.O. Box 7367
Syracuse, New York 13261
(315)234-8546

MR. RICK MUSTICO: Welcome, everybody. This public meeting is for the presentation of the proposed plan for the former General Motors - Inland Fisher Guide site, Operable Unit 2. My name is Richard Mustico. I'm the site project manager for the New York State Department of Environmental Conservation.

Also with me today is my supervisor Don Hesler. Don is also one of the site geologists. Our other geologist for the site is Bob Edwards back in the back corner over there. We also have Mark Sergott of the New York State Department of Health. And from EPA we have Patricia Pierre, who is the Environmental Protection Agency site project manager. And Chloe Metz also from EPA who is a risk assessor.

Tonight we'll be going over the general investigation and cleanup process, background information and also some site specific information. Then we'll be discussing the proposed remedy for the site. We have a stenographer recording the meeting tonight. So I would ask for you to wait until the end of the presentation if you have any questions or comments and then come up to the microphone over there, state your name, identify yourself, and then ask your question or state your comment for the record.

General Motors - Inland Fisher Guide site, this is just the location figure. Don, if you could point out Route

11 and the Thruway and Town Line Road all the way over. And then Factory Avenue. Just kind of down a little bit. That's the Thruway. Yep. Just for a location where we're talking about.

The General Motors - Inland Fisher Guide site consists of two operable units. An operable unit is a portion of the site that for either technical or administrative purposes may be addressed separately from the rest of the site. For example, as in this case we have contamination on the former GM property and off of the former GM property.

The first operable unit, or OU1, consists of the former GM plant property and groundwater. And that's the blue outline. There is the plant site there.

And the second operable unit, or OU2, consists of property off of the plant property from Town Line Road to Route 11, and that's shaded on this figure in blue and green.

Also we have Ley Creek which is in darker blue. Can you point out Ley Creek too? Thank you. And Ley Creek from the Route 11 bridge to the mouth of Ley Creek is a separate site called Lower Ley Creek. So there is another site that continues on downstream below Route 11.

The site consists of approximately 9,200 linear feet of Ley Creek from Town Line Road to Route 11, and soil in the Ley Creek floodplain area, which is generally along

the creek banks between Town Line Road and Route 11.

There is soil and sediment in the 10-acre wetland, sometimes referred to as the National Grid Wetland, located on the northern portion of the National Grid property and it's directly west of the GM facility property, which is designated by the GM-IFG OU1 facility.

We have approximately 1.8 acres located between the former GM facility's northern property boundary and Factory Avenue. And we refer to this as the Factory Avenue area. It's shaded in light purple up there.

Finally, an area located along the northern shoulder of Factory Avenue in the vicinity of LeMoyne Avenue. And we refer to this as the Factory Avenue/LeMoyne Avenue Intersection Area.

Remedial investigation. Remedial investigation is conducted to determine the nature and extent of contamination. In order to determine the nature and extent of contamination, we take samples of the various environmental media which may be impacted. Environmental media for this site includes soil, sediment and surface water.

The nature of contamination would be the type of contaminants of concern. A contaminant of concern is a contaminant that is sufficiently present in both frequency and concentration in the environment to require evaluation

for remedial action. Not all contaminants identified on the property are contaminants of concern. In this case for this site the contaminants of concern are polychlorinated biphenyls, more commonly known as PCBs, along with some metals, such as lead, nickel, zinc, and there are some other metals too. Main contaminants of concern at the site are PCBs, however.

The extent of contamination would be how far the contamination has migrated in each of the various media. During the remedial investigation we obtained samples of environmental media and sent them to laboratories for analysis. Soil sample results for PCBs for this site were from below laboratory detection limits or non-detect to 18,000 parts per million. And one particle in one million particles would be one part per million.

For sediment the sediment results for PCBs were from non-detect to 1.3 parts per million upstream of the site, and from non-detect to 207 parts per million in the site reach of the creek. PCBs were not detected in surface water in the site portion of Ley Creek except for one sample at 0.04 parts per billion, with a B. And PCBs were not detected in surface water upstream of the site.

Crawfish and fish were collected and analyzed for contaminants also. For PCBs, the average PCB fish tissue and invertebrate tissue concentrations in samples from the site

reach were approximately twice as high as from samples collected upstream of the site.

After the investigation has been completed, that is after we've determined the nature and extent of contamination, various remedial alternatives are reviewed and compared to each other.

The New York State DEC in concert with the United States Environmental Protection Agency and the New York State Department of Health propose a remedy for the site, which is why we're here tonight. At a minimum the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

After the public comment period has ended, a final remedy is selected. The final remedy is written in a document called the Record of Decision. The remedy is designed and then implemented. And after the remedy has been completed, monitoring is typically required to ensure the effectiveness of the remedy or to make sure that the remedy is working as we intended it.

Main highlights of the proposed remedy for the site. Sediment excavation. Sediment excavation would include bank to bank excavation in areas greater than one part per million PCB. In areas of excavation, all of the

creek's -- all of the sediment to the creek's clay layer would be removed.

Soil excavation. Soil would be excavated to a cleanup goal also of one part per million PCB. Depths of excavation would typically be one to two feet, but are deeper in some areas depending upon the concentration and the depth of the PCBs. After an area is excavated, the area will be restored. For restoration some areas are envisioned to be simple clean soil backfill, topsoil and seeding. Other areas such as wetland restoration will be more complicated, envisioned to be more complicated with the need to determine appropriate tree, plant, seed species, final elevations.

And then monitoring would occur to make sure the remedy remained as intended. Some examples would be bank inspections or wetland monitoring. As a side note, the proposed remedy that we're going over today is consistent with the remedy chosen for the Lower Ley Creek site downstream of this site.

We've broken up the proposed remediation over the next five figures. This figure is the National Grid wetland remediation area. If you can point out Factory Avenue. The figure depicts the excavation that would be required to meet one part per million PCB in this area, and there is one foot excavation depth in blue and two and a half foot excavation depth in yellow. And also in this area there are some small

removals toward the bottom of the figure that would be for metals contamination.

This is a slide of the Factory Avenue area proposed remediation to meet the soil cleanup goal of one part per million PCB. Point out Town Line Road and Factory Avenue. The excavation in this area is proposed to be one to four feet deep with most of the excavation being three feet depicted in blue and four feet depicted in pink-ish purple-ish color.

This figure depicts part of the proposed excavation along the bank of the stream. During the remedial investigation sampling this area showed a little bit more extensive contamination than the typical bank or floodplain area. The remedy, the proposed remedy envisions excavation typically to one foot shaded in blue, but a couple of small areas to four feet shaded in purple and six feet shaded in yellow.

This area is the Factory Avenue/LeMoyne Avenue Intersection Area. And if you could point out Route 11. That is Factory Avenue. That is LeMoyne Avenue. And Route 11. Here again we have the various proposed soil excavation depth depicted by the different shades. We have one and a quarter feet in purple. We have two feet in blue and three feet in yellow to meet one part per million PCB for soil.

And the final remediation figure depicts the proposed sediment removal shaded in yellow from Ley Creek over the 9,200-foot stretch from Town Line Road to the Route 11 bridge. The sediment would be removed from approximately 78 percent of the stream in the area to meet the sediment cleanup goal of one part per million. Any excavation in the area would remove all of the loose sediment to the clay stream bottom. And it's envisioned that any area excavated will be backfilled with approximately six inches of clean sand.

To summarize, we've got a cleanup goal of one part per million PCB in both soil and sediment. We have a cost of approximately $14 million. For soil and sediment we have approximately 25,000 cubic yards of removal and we're looking at approximately two years of construction work/field work. We are scheduled to select the remedy in the Record of Decision this winter and commence the design in 2015 and we hope to commence construction toward the middle or end of 2015.

And then the last slide, public comment period ends December 17th and you can send comments to me at the address up there or via e-mail. And that's it.

Do we have any questions or comments? If you would like to come up to the mic again, state your name and then state your question or comment.

MR. BOB PAPWORTH: My name is Bob Papworth. And I live in Syracuse. I'm affiliated with the Nature Conservancy as a trustee for Central New York. This summer I appeared at the Ley Creek presentation and I told everybody at that time the same thing I'm going to tell you, which is that there is a major alternative available called thermal treatment by which the sand can be cleaned. It's called thermal desorption treatment specifically. It refers to a treatment which is limited to no more than about a thousand degrees Fahrenheit and it removes the light metals, PCBs and so forth from sand. And then any heavy metals which remain have to be removed by a mechanical method. And the gases which are created have to be captured by an off-gas capture system. The three major components of it.

There is a lot of information about this on the internet. The EPA, if you want to look at the EPA's website, type in EPA/thermal desorption, and get a citizens guide to thermal desorption there, and in addition to a Wikipedia page and a lot of other information and a lot of vendors.

It's a technique that's frequently used in the mining business in the west. And I did get one proposal from a company to do so for lower Ley Creek. They quoted a price for capital expense of about $10 million for a plant and an additional $10 million to clean up the sand in the lower Ley Creek.

The point then of course is that you can apply the same plant to the upper sections of Ley Creek as well so you reallocate the capital costs and you bring the cost down on a per site basis so that the $25 million which has been quoted or budgeted for lower Ley Creek plus the 14 for this one here gets you north of, you know, close to 40 million bucks. I think you can do a better job for less money using thermal desorption.

Now there are some things to be thought about. First of all, in choosing a vendor, you would like to talk to two or three vendors simultaneously, negotiate with them simultaneously, compare notes, work them back and forth.

Secondly, you would like to have a vendor, a set of vendors for whom this particular kind of project is right in the middle of their line of business. You don't want something that is tangential to what they would normally be doing.

The third point is that you want to have very good communications from the vendor because you've got a lot to learn from the vendor and they've got a lot to learn from you. Done a lot of meticulous work obviously here preparing this presentation, so there is a lot to be communicated.

And then finally, very importantly you need a high service type of contract, a turnkey contract, for the plant, for the operating people, for the operation to get to a final

result. And the analogy there is the Covanta contract with OCRRA, which has been working successfully for 20 years. Covanta supplies the operating people and the supervision of repairs and maintenance for the plant, so it seems to be working quite well. It's a very good model to follow.

So to sum it up, I think you can clean up the whole of Ley Creek on the eastern side of the lake with a single thermal desorption plant, take a number of years, but you're into a number of years of the project anyway. And I think you can do a better job and leave no toxic landfills in the township of Salina in the aftermath of the project. That's it.

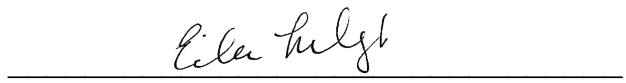
MR. RICK MUSTICO: Thank you. Anybody else? Okay. I guess that concludes the public meeting for tonight. Thank you all for coming out. I appreciate it.

(6:28 p.m.)

* * *

C E R T I F I C A T I O N

I, EILEEN MCDONOUGH, RPR, CRR, Court Reporter, do hereby certify that the foregoing is a true and correct transcript of the stenographically reported proceedings held in the above-entitled matter.



EILEEN MCDONOUGH, RPR, CRR

OPERABLE UNIT 2 OF THE GENERAL MOTORS – INLAND FISHER GUIDE
SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE
RECORD OF DECISION

APPENDIX V-e

WRITTEN COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD

Mustico, Richard (DEC)

From: Hooker, Michael <mehooker@ocwa.org>
Sent: Tuesday, November 25, 2014 12:13 PM
To: Mustico, Richard (DEC); doh.sm.BEEI
Cc: psherlock@ocwa.org
Subject: General Motors – Inland Fisher Guide Site #734057 (Salina, Onondaga Co.)

Richard Mustico
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7013
518-402-9676
Richard.Mustico@dec.ny.gov

Mark Sergott
NYS Department of Health
Empire State Plaza
Corning Tower, Room 1787
Albany, NY 12237
518-402-7860
BEEI@health.ny.gov

Gentlemen:

Regarding the subject project (General Motors – Inland Fisher Guide Site #734057 (Salina, Onondaga Co.)), please be advised that OCWA has concerns related the protection of OCWA's infrastructure at the following locations:

- 16" service to former GM plant (OCWA transmission main on south side of tracks, we maintain a 16" service under the tracks, stopping at the former GM property adjacent to the tracks).
- 12" A.C. Airbase water main that crosses Factory Ave, just east of the Town of Salina Highway Garage.
- 8" water main that crosses under Ley Creek, on east side of Lemoyne Ave.
- 12" water main that crosses under Ley Creek, on the west side of Route 11.

Accordingly OCWA respectfully requests that the Authority's Managing Engineer, Patrick M. Sherlock, P.E., be contacted prior to the start of work in and around the vicinity of the aforementioned sites to ensure proper mark-out and protection of Authority property.

Thank you for your attention related to our concerns,

Sincerely,

Michael E. Hooker, Executive Director
Onondaga County Water Authority
PO Box 4949

Syracuse, New York 13221-4949
Phone: 315-455-7061 ext. 3114
email: mehooker@ocwa.org

Please consider the environment before printing hard copies.

PALMERTON GROUP
A Division of GZA GeoEnvironmental, Inc.

6296 Fly Road
East Syracuse, NY 13057
315-800-1800
315-437-5444

December 16, 2014

Richard Mustico, P.E.
NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233

Re: General Motors- Inland Fisher Guide Site Operable Unit 2 Proposed Plan Comments

Dear Mr. Mustico:

Palmerton Group (Palmerton), A Division of GZA GeoEnvironmental, Inc. (GZA) is submitting the following comments on behalf of four companies (Carrier Corporation, Cooper Crouse-Hinds LLC., Syracuse China Company, and Niagara Mohawk Power Company, d/b/a National Grid) collectively referred to as the "Companies" on the Proposed Plan for the General Motors- Inland Fisher Guide Site Operable Unit 2 Also included as Appendix A are the previously submitted recommendations regarding the benefits of consolidating the Upper Ley Creek and Lower Ley Creek projects.

The State's consideration of these comments is appreciated in developing the Record of Decision for the Operable Unit 2 of the General Motors- Inland Fisher Guide Site. Should you or others have questions about the recommendations and comments provided, please do not hesitate to contact David Palmerton at (d.palmerton@palmertongroup.com), or Julia Braunmueller at (j.braunmueller@palmertongroup.com).

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Julia Braunmueller
Assistant Project Manager

David L. Palmerton, Jr.
Principal & Sr. Vice President

Enclosed:
Comments on Operable Unit 2 Proposed Plan
Attachment A: Ley Creek Project Consolidation Recommendations

PALMERTON GROUP
A Division of GZA GeoEnvironmental, Inc.

The following provides comments on the Proposed Plan for the General Motors- Inland Fisher Guide Site Operable Unit 2 (Proposed Plan). These comments are submitted on behalf of four companies (Carrier Corporation, Cooper Crouse-Hinds LLC., Syracuse China Company, and Niagara Mohawk Power Company, d/b/a National Grid) collectively referred to as the "Companies."[1] Also included with the comments herein are recommendations intended to promote a more efficient, implementable, and cost-effective remedy, and to ensure consistency with the National Contingency Plan ("NCP").

1. The proposed remedy for Ley Creek upstream of the Route 11 Bridge and the planned remedy for Lower Ley Creek should be coordinated if not integrated into a single remediation project to increase the efficiency of the cleanup; reduce the environmental footprint of the project; limit the duration and extent of impacts on the local community, and, increase the overall protectiveness of the remedies. The Companies previously commented on the Proposed Plan for Lower Ley Creek Subsite with regard to the benefits of integration of the upstream and downstream cleanups into a single construction project. These recommendations are resubmitted as Attachment A for inclusion in the administrative record as well as for consideration in development of the Record of Decision (ROD).
2. The Record of Decision (ROD) should provide an option for disposal of excavated soils and sediment having PCB concentrations less than 50 mg/kg in a suitable local landfill in the same manner as the ROD for the Lower Ley Creek Subsite. Assuming that the technical requirements for disposal in either the Town of Salina Landfill or the Cooper Crouse-Hinds North Landfill can be met, such disposal would reduce the risks and the environmental footprint of waste transport relative to offsite disposal. Considering that essentially all of contamination being managed in the proposed cleanup upstream of the Route 11 Bridge and the planned cleanup downstream of the Route 11 Bridge emanated from the former GM Fisher-Guide Facility, the same disposal methods should be available for both projects.
3. Remedial action levels for PCB sediments and soils should be based upon site-specific risk assessments rather than generic soil and sediment cleanup objectives of 1 mg/kg identified in the Proposed Plan. The assumptions underlying the generic values are not applicable to the circumstances of the Upper Ley Creek Site.
4. NYSDEC should provide flexibility in the ROD to design and build appropriate sediment caps to contain sediments with unacceptable post-removal residual PCB contamination as well as sediments which should be remediated but cannot be efficiently removed due to physical limitations.
5. The ROD should allow for use of adaptive management in the description of long-term O&M to allow for appropriate modifications of O&M activities over the long term.

[1] The Companies have been identified by EPA as potentially responsible parties for the contiguous Lower Ley Creek Site, which was created as a separate site from the Upper Ley Creek Site based solely on an artificial geographic boundary despite the fact that the General Motors Inland Fisher Guide and Upper Ley Creek Site is the primary, if not sole, source of the conditions that EPA has determined require remediation at the Lower Ley Creek Site.

ATTACHMENT A

MEMORANDUM

Consolidation Options for Remedial Activities
At Upper and Lower Ley Creek Subsites
June 3, 2013

Recently reported investigations of sediment and floodplain contamination along Ley Creek further support the conclusion that the release of contaminants from the GM Inland Fisher Guide Plant (IFG) will result in the active remediation of Ley Creek; moreover, but for those releases, there would be no active remediation of the Creek. PCBs were handled and lost in massive quantities at IFG over many years. PCBs released by IFG to Ley Creek and its floodplain will drive remedies entailing soil and sediment removal and disposal for both the NYSDEC-lead Site upstream of the Route 11 crossing and the USEPA-lead Site downstream of Route 11 (the "upstream" and "downstream," respectively). The common origin of the contamination driving active remediation at both Sites overarches the set of technical and policy reasons for unifying the upstream and downstream remedies for Ley Creek.

The similar nature of contamination throughout upstream and downstream Ley Creek, existing cooperative agreements and partnerships, green remediation policies, and common sense, argue for USEPA and NYSDEC to consider optimizing the cleanup of Ley Creek sediments and floodplain soils through development of a single, integrated cleanup-project design to minimize the overall environmental footprint of the remediation. Precedents for cost-share/work-share sediment remedies which coordinate work and funding by government and nongovernment (*e.g.*, RACER Trust) entities point to one possible avenue for a single optimized project design to be developed and implemented. The likely benefits would be to increase the overall protection of human health and the environment; reduce the overall costs; and minimize the environmental footprint of the remedy for Ley Creek sediments and floodplain soils.

The recently reported findings of elevated levels of PCB (>100 mg/kg) in sediment and floodplain soil samples upstream and downstream warrant a single construction project design to substantially reduce the overall environmental footprint and cost of the Ley Creek cleanup and avoid the unreasonable expense of two or more independent remedial design and construction projects for both upstream and downstream. The reports, prepared by O'Brien and Gere (2013) and Los Alamos Technical Associates, Inc. (2012), confirm the similar characteristics of sediment and floodplain soil contamination as well as physical characteristics on both sides of the dividing line between the NYSDEC-lead and USEPA-lead sites. The findings, in separate reports authored by two different consultants, along with knowledge of remedy precedents make clear that USEPA and NYSDEC will determine that active remediation of sediments and floodplain soils will be necessary in both upstream and downstream sections and the design and implementation for each segment will face nearly identical challenges. There are so many

clearly foreseeable common project design elements and common challenges posed by site conditions both upstream and downstream that the opportunity to substantially reduce the overall environmental footprint and costs of the cleanup of Ley Creek through a single optimized project has to be taken seriously. Agency decisions regarding the extent of soil and sediment remediation upstream and downstream are scheduled within four months of each other and it appears that NYSDEC and USEPA have been coordinating some work. So, it appears inherently feasible to consider development of an optimized single project design.

Project elements for remediation upstream and downstream that will be very similar if not identical include: engineering design process, pre-design sampling, securing property access, procurement and staging of materials, public outreach, site security, contracting and procurement, mobilization, construction of access roads and support facilities for processing sediment and soils, sediment and soil removal, mitigation of potential environmental releases, sediment/soil dewatering, materials handling and disposal, stormwater control and management, environmental monitoring, restoration of disturbed areas, demobilization, and post-construction O&M.

A few examples of common design elements and challenges for the upstream and downstream sections of Ley Creek which suggest the common sense of attempting to optimize the remediation of Ley Creek through a single project design are offered in the following:

- The uncertainty regarding sediment PCB distributions in both sections of the Creek is relatively high from the perspective of remedial design and additional sampling is likely to be one of the ways that the uncertainty will be addressed during design. A single larger scale pre-design sampling program spanning both sections is likely to reduce the overall amount of time, effort and environmental footprint of that activity. Furthermore, the development of a common design approach to interpreting sediment PCB data to determine the spatial extent of targeted sediment remediation should be considered.
- Decision protocols to determine the completion of excavation and use of contingency measures, including cap designs to contain residuals, are likely to be common elements of sediment remediation in both sections of Ley Creek. Having two designers simultaneously developing two different protocols would not be sensible.
- The removal of sediment and/or construction of sediment caps close to roads and associated structures crossing the Creek is likely to be a common element to the design of sediment remediation both upstream and downstream. This includes areas immediately upstream and possibly downstream of the Route 11 bridge (and perhaps underneath the bridge). Engagement of State and local government stakeholders during design and tradeoff decisions regarding the extent of removal near such structures, whether incorporated in a design protocol or made in the field during construction, are likely.

Development of a common approach to construction near bridges and other structures and review with appropriate stakeholders would be more efficient and sensible than covering the same administrative and technical ground twice.

An important set of benefits to the single-project design and implementation are those of adaptive management. Adaptation of field operations based upon experience and the findings of field conditions different than expected is the rule rather than exception in sediment remediation. Some adaptations are part of the usual "learning curve" of field personnel who may be operating excavators, stabilizing excavated sediments, or performing some other task. Other adaptations entail changes in design, such as modification of aforementioned protocols, based upon experience. The benefits of the adaptations are improved performance such as increased productivity, increased efficiency, or reduced environmental impact. The most efficient way for those adaptations to be incorporated and efficiently applied in the remediation of the Lower Ley Creek sediments is to have a single design and implementation process.

There are also a number of easily envisioned economy-of-scale benefits to be considered that might result in greater productivity and lower costs for elements of project design, support facility construction, sediment removal, dewatering, disposal, restoration and monitoring. Additional synergies would likely be identified during a collaborative planning of a single optimized project which would recognize the differing capabilities of stakeholders and the opportunities resulting from combining resources. A hypothetical example involves mitigation of PCB and sediment releases during sediment excavation, a foreseeable element of the sediment removal both upstream and downstream. Highly effective systems such as temporary damming and bypass pumping, which could accommodate faster rates of sediment removal and backfilling operations might be appropriate to a larger-scale sediment remedy but may not be justifiable in each of two separate smaller-scale remedies. Such opportunities for better overall performance at lower cost need to be explored.

The overall duration of construction work along Ley Creek is one obviously important aspect of the environmental footprint of the cleanup of Ley Creek. Considering the sediment remediation component, it is easy to envision a two-to-three-year period of construction impacts to the Creek (i.e. two construction seasons of work possibly separated by a year), if the work proceeds as two separate projects. It is feasible to complete the work in the Creek during a single construction season, and thereby reduce the duration of impacts, if a single optimized design is pursued.

Besides the potential practical benefits of an integrated project, existing cooperative and partnership agreements, and agency policy call for serious consideration of optimization such as the integrated project recommended here. The 1993 CERCLA Cooperative Agreement for the Onondaga Lake Superfund Site (since amended at least eighteen times) and supporting

submittals by NYSDEC to USEPA recognize the need to address numerous sub-sites impacting Onondaga Lake, including Ley Creek-related sub-sites, through development and implementation of a comprehensive site-wide coordination effort to assist with regulatory consistency and achievement of overall remediation objectives. The agencies agreed as part of their Cooperative Agreement to coordinate remedial actions such that all remediation meets CERCLA and NCP requirements.

This need for cooperation and coordination of effort was mandated further by the 1999 federal legislation which created the Onondaga Lake Partnership. The Partnership formed by federal, state, and local governments and other involved parties is directed by law to coordinate the myriad Onondaga Lake management activities, including coordinating actions taken under federal laws such as CERCLA. The legislation is designed to promote consistencies and efficiencies of action, and to maximize the benefit of invested resources. Coordinating efforts upstream and downstream to the extent feasible and appropriate is entirely in line with these goals.

Both USEPA and NYSDEC have green remediation policies in place which effectively call for consideration of minimizing the environmental footprint of the Ley Creek cleanup. USEPA's recently published National Strategy to Expand Superfund Optimization Practices from Site Assessment to Site Completion (OSWER directive 9200.3-75 September 2012) calls for an increased focus on optimization of Superfund Sites and identifies tools and resources to help the regions optimize projects. The challenges and opportunities of a single project design for the cleanup of Ley Creek would make this Site a good candidate project as sought by the optimization guidance.

The mixed elements of RACER Trust and USEPA funding, differing procurement capabilities, and potentially divergent interests among stakeholders present administrative and potential legal challenges to development and implementation of a single integrated cleanup project; however, elsewhere such challenges are being overcome due to the greater common interest in cost-effective site remediation. For example, USEPA, USACOE, NJDOT, and NJDEP entered into a federal-state partnership to jointly undertake a complex remedial investigation and feasibility study for the Lower Passaic River. A Project Management Plan was prepared by the governmental entities which allocated among the partners the various tasks and costs necessary to complete the project.

The sediment remediation program authorized by the Great Lakes Legacy Act (GLLA) has also advanced approaches for integrating government and private work and funding that may be useful to consider for Ley Creek. Co-funding of GLLA projects is required and federal dollars are matched at some level by private and/or local or state governments. The typical GLLA project starts with meetings of stakeholders who jointly consider the potential

opportunities and obstacles to such projects. The cooperative work starts small with the identification of tasks that would lead to the larger remediation project - typically RI/FS-type tasks - and consideration of the costs of those tasks and the extent to which the work or costs will be shared. The initial cooperative phase allows stakeholders to become comfortable with the process as the initial tasks are completed and before more substantial commitments of resources would be made. Meanwhile the costs and benefits of the larger remedial project become clearer as the initial work proceeds. That "start-small" opportunity exists for the development of an integrated Ley Creek remedy.

A good starting point for Ley Creek would be collaborative identification and collection of needed pre-design data. Such a planning process would likely entail initial consideration of the current level of uncertainty regarding contaminant distributions, particularly PCB distribution, and an exchange of ideas about how that level of uncertainty can be reduced by pre-design sampling or compensated for by design and construction methods. Specific tasks such as obtaining property access, sample collection, survey, chemical analysis, geotechnical analysis, investigation waste disposal and reporting could be defined on a site-wide basis and estimates of costs for each such task reviewed by USEPA and RACER Trust. The individual funding parties could use these estimates with standalone estimates by USEPA and RACER Trust to decide whether there are savings to be achieved as well as other benefits of work sharing (the extent to which USEPA or RACER Trust performs a task) or cost sharing.

A collaborative approach to implementing pre-design investigations could be extended in similar fashion to remedial design and implementation by first defining design and construction tasks and subsequently working through the division of work-sharing and cost-sharing. The single optimized project would reduce costs and, by reducing overall environmental impacts of construction, increase overall protectiveness of the Ley Creek cleanup.

In summary, it is imperative for USEPA and NYSDEC to maximize the efficient use of the limited funding secured from the GM Bankruptcy settlement because the IFG facility is the source of contamination driving the remedies for both Upper Ley Creek and Lower Ley Creek (including the Old Ley Creek Channel). Unifying the remediation of these areas must be explored as a way to maximize the use of funding. Existing agreements, partnerships, site precedent, policies and guidance all support consideration of a single optimized project design by the agencies for both Upper and Lower Ley Creek.

References

Los Alamos Technical Associates, Inc. Data Evaluation Report, Lower Ley Creek Subsite of the Onondaga Lake Superfund Site, Syracuse New York. December 2012.

O'Brien and Gere. Revised Off-Site Remedial Investigation Former IFG Facility and Deferred Media Site, Syracuse, New York. March 2013.

NYSDEC and U.S. EPA, Onondaga Lake Site Cooperative Agreement and related documents. Circa 1993 and later.

Onondaga Lake Partnership Charter. August 9, 2000.

USACOE, U.S. EPA, and NJDOT, Project Management Plan, Lower Passaic River, New Jersey. April 2003.

HISCOCK & BARCLAY LLP

Richard R. Capozza
Partner

December 17, 2014

VIA ELECTRONIC MAIL
&VIA UPS OVERNIGHT MAIL

Richard Mustico, P.E.
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Re: Comments to the General Motors – Inland Fisher Guide Site, Operable Unit 2, Subsite of the Onondaga Lake Superfund Site, Town of Salina, Onondaga County, New York

Dear Mr. Mustico:

Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid") submits the enclosed comments regarding the New York State Department of Environmental Conservation's ("NYSDEC") and U.S. Environmental Protection Agency's ("EPA") Proposed Plan for General Motors – Inland Fisher Guide Site, Operable Unit 2, Subsite of the Onondaga Lake Superfund Site, Town of Salina, Onondaga County, New York, dated November 2014. The purpose of National Grid's comments is to ensure that the final selected remedy accommodates the continued safe, uninterrupted operation of National Grid's electric and natural gas facilities located within the project boundary.

These comments are submitted solely on behalf of National Grid, and are in addition to comments submitted by "the Companies," a group of which National Grid is a member. National Grid reserves the right to rely on and use the public comments submitted by any other person on the Proposed Plan and supporting documents.

National Grid is available to meet with NYSDEC and EPA as well as their technical consultants to discuss the enclosed comments in further detail.

Very truly yours,

Richard R. Capozza
Counsel for National Grid

RRC:lm
Enclosure

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NIAGARA MOHAWK POWER CORPORATION D/B/A NATIONAL GRID'S ("NATIONAL GRID") COMMENTS REGARDING THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S AND U.S. ENVIRONMENTAL PROTECTION AGENCY'S PROPOSED PLAN FOR THE REMEDIATION OF GENERAL MOTORS – INLAND FISHER GUIDE SITE OPERABLE UNIT 2, SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE

December 17, 2014

1. National Grid's subsurface Natural Gas Pipeline 50, overhead electric transmission facilities, and ancillary structures are located within areas designated for soil excavation within the site boundary for Operable Unit 2 of the General Motors – Inland Fisher Guide Site. *Proposed Plan for the General Motors – Inland Fisher Guide Site Operable Unit 2* at 7, 15, and 21 (Nov. 2014). The Proposed Plan, Record of Decision, remedial design and remedial action should address and accommodate National Grid's continued safe, reliable, and uninterrupted operation of these facilities.

2. The Proposed Plan contemplates installation of a cover within excavated areas of the Factory Avenue Area. The cover would consist of an indicator fabric layer overlain by a minimum of 12 inches of clean soil and a top layer consisting of vegetation, asphalt, or gravel, as appropriate. *Proposed Plan* at 21. The vicinity of National Grid's subsurface utilities is specifically called out as an example area for which a cover would be installed. *Proposed Plan* at 15. However, installation of a cap and demarcation layer over Natural Gas Pipeline 50 presents safety concerns, including the potential for migration of natural gas and an increased risk for fire and explosion. Installation of a cap and demarcation layer also presents long-term technical and feasibility issues in the event of pipeline replacement or repair. As such, National Grid cannot permit capping within the Natural Gas Pipeline 50 corridor. National Grid expects that surface soils located within the Natural Gas Pipeline 50 corridor that do not meet the Soil

Cleanup Objectives will be excavated and immediately backfilled, thereby obviating the need for a cover over the Pipeline.

3. The exact location of the National Grid Natural Gas Pipeline 50 relative to the areas designated for excavation or relative to sample locations is not shown on any drawing in the Proposed Plan or Remedial Investigation Report documents. While it is generally assumed that Pipeline 50 runs parallel to Factory Avenue, National Grid respectfully requests that the Figures in the Proposed Plan be revised to reflect the need to locate the exact location and depth of Natural Gas Pipeline 50 prior to the commencement of any activities.

4. The Proposed Plan states that higher concentrations of PCB contamination in the Factory Avenue Area were found at a depth of eight (8) to ten (10) feet below grade surface ("bgs"). *Proposed Plan* at 7. However, data from the March 2013 Revised Off-Site Remedial Investigation Report for OU2 indicates that the vast majority of contamination within the Factory Avenue Area is present in the zero (0) to three (3) foot interval, not at deeper depths. *O'Brien & Gere, Revised Offsite Remedial Investigation, Former IFG Facility and Deferred Media Site*, Table 4-1c (March 2013). Only one sample, 8+52-NW, which was collected in the eight (8) to ten (10) foot interval, showed PCBs above industrial SCOs. The remaining samples that exhibited PCB concentrations above industrial SCOs were from the zero (0) to three (3) foot interval. In light of this information, the remedy should include excavation and disposal of soils to a depth of three (3) feet in areas designated for soil removal within the Pipeline 50 corridor. Lateral excavation should extend to a twenty (20) foot clean zone around the pipeline, as discussed below. Excavated areas should be immediately backfilled with clean fill to maintain pipeline protection. Backfill material must meet National Grid specifications. Backfill

elevations within the Natural Gas Pipeline 50 corridor should match that of abutting areas to maintain a consistent grade.

5. The following ***minimum*** requirements must be met with regard to any field activities to be performed within National Grid's Natural Gas Pipeline 50 corridor. Field activities must be approved by National Grid prior to commencement.

a. Final construction drawings must be submitted and approved by National Grid one hundred and twenty (120) days in advance of any field activities.

b. Extreme caution must be taken when working in the general vicinity of the Natural Gas Pipeline 50 corridor. When excavating within two (2) feet of the pipeline, the pipeline shall be physically located by hand in order to protect the pipe and its coating.

c. Random travel across the pipeline in grass areas with heavy equipment and loaded trucks is not permitted. Travel across the pipeline shall be confined to designated crossing areas designed and stamped by a New York State certified Professional Engineer.

d. Extreme care shall be taken to avoid damage to natural gas witness posts, test stations, and other related natural gas facilities. Any damage of such facilities shall be reported to National Grid immediately.

e. Blasting, if any, will not be permitted near or on the Natural Gas Pipeline 50 corridor without the advanced, written approval of the Regional Gas Superintendent or the Manager of System Gas Engineering at National Grid.

f. Notice must be provided to National Grid, via Dig Safely NY, a minimum of two (2) weeks prior to the scheduled activity date for any subsurface activities within the Natural Gas Pipeline 50 corridor.

6. The remedial design should require that a clean zone (*i.e.* soil meets Soil Cleanup Objectives) be maintained around Natural Gas Pipeline 50. To ensure a clean zone is established, the lateral extent of excavation should be a minimum of twenty (20) feet within the Natural Gas Pipeline 50 corridor (at least ten (10) feet on either side of the pipeline).

7. National Grid recommends incorporating hand-driven test holes during the pre-design investigation to verify depths of the Natural Gas Pipeline 50, determine whether contaminated soil abuts the pipeline, and compile data necessary to determine the minimum requirements for a clean zone around the pipeline.

8. National Grid requests that it be given the opportunity to review and comment on (i) the removal of abutting, subsurface contaminated soil within the Natural Gas Pipeline 50 corridor, (ii) any Natural Gas Pipeline 50 crossing locations, (iii) specifications for replacement fill material and, (iv) compaction requirements for backfilling adjacent to, around, and over the gas pipeline.

9. In the event that relocation of any of National Grid's electric or natural gas facilities is necessary to accommodate any aspect of the Site remedy, all costs associated with such relocation will be reimbursable to National Grid by the party(ies) performing the remedy. Any relocation design costs must be pre-paid by the party(ies) performing the remedy to National Grid. National Grid will provide relocation cost estimates (including design costs) prior

to any relocation work. Following the completion of any relocation work, a reconciliation will be completed by National Grid based on actual costs.

10. As previously stated, National Grid must be fully compensated should any of its facilities require relocation because of the Site remedy.

11. An access agreement with National Grid will be required prior to performing any field activities around National Grid's pipelines, equipment, overhead lines, or other facilities, whether such is located on National Grid-owned property or through an easement, and for all areas located outside the area designated as the "National Grid Wetland Area."

12. A separate agreement for access to property owned by National Grid will be required prior to commencement of any work within the area designated as the "National Grid Wetland Area."

13. During the Site's remedial design and construction field work, National Grid must have uninhibited ingress and egress at all times to its gas and electric facilities for operation, maintenance and emergency purposes.

14. After the Site's remedial construction has been implemented, National Grid must have uninhibited ingress and egress to access its gas and electric facilities to ensure safe, uninterrupted operation and service to its customers. This would include, at a minimum, the ability to excavate around the gas pipeline, and below and around the electric transmission and subtransmission facilities, and the ability to operate equipment. Accordingly, to avoid damage to any soil capped areas, heavy duty access roads must be incorporated into the remedial design to

allow access for the equipment necessary for operation, maintenance, repair and/or replacement of gas and/or electric facility components.

15. All remedial work within the vicinity of the National Grid transmission, subtransmission and distribution lines, must comply with the attached **Exhibit A** "Engineering Document, Conditions for Proposed Activities Within Transmission Line Rights-of-Way."

16. Any movement of equipment or surface work including excavation, capping, or cover to be performed below or adjacent to the National Grid transmission, subtransmission and distribution lines cannot result in a violation of minimum clearance requirements between the ground and the electrical line(s) taking into account current line sag and potential future line sag resulting from upgrades to the National Grid transmission system. Minimum clearing distances must be maintained at all times.

17. National Grid requests that the ROD include a discussion regarding the plans for funding the remedy including the amount available from the GM bankruptcy, the current balance of the allocated funds, the source of funding and any difference between the GM settlement amount and that specified in the Proposed Plan, and the source of funds should the actual costs exceed the Proposed Plan estimate.

18. These comments are submitted solely on behalf of National Grid. Additional comments on the EPA Proposed Plan and supporting documents are being submitted on behalf of a PRP Group for Lower Ley Creek, of which National Grid is a member.

Exhibit A

Engineering Document, Conditions for Proposed Activities Within Transmission Line Rights-of-Way

Conditions for Proposed Activities Within Transmission Line Rights-of-Way

Table of Contents

1.0 Scope

1.1 This document presents minimum conditions for work within National Grid electric transmission line rights-of-way, whether owned in fee or by easement. Activities that are not fully in conformance with this document may sometimes be allowed provided they are specifically shown on plans or described in specifications or other documents that have been reviewed and approved by National Grid.

1.2 "Requestor" as used in this document refers to any person, organization, corporation or other entity requesting permission to conduct activities within a transmission line right-of-way or anyone acting on the Requestor's behalf.

2.0 Compliance/Safety

2.1 All activities conducted by the Requestor shall comply with all applicable Federal, state, and local laws, statutes, rules, regulations, and codes. In particular, the requirements of the following statutes, regulations, and safety codes and guidelines, appropriate for the voltage(s) of the transmission line(s) within the right-of-way, must be met:

2.1.1 National Electrical Safety Code

2.1.2 In Massachusetts:

a 220 CMR 125.00, "Installation and Maintenance of Electric Transmission Lines,"

b MGL Chapter 166 Section 21A "Coming into Close Proximity to High Voltage Lines" except that the required clearance of six feet is insufficient. The minimum clearance allowed by OSHA shall be maintained.

2.1.3 In New York, Part 57 of the New York State Industrial Codes Rules (also known as the "High-Voltage Proximity Act") (http://www.labor.ny.gov/workerprotection/safetyhealth/sh57.shtm)

2.1.4 All OSHA regulations governing working clearances to electric distribution and transmission lines shall be followed. Although regulations 29 CFR 1926 Subpart CC and 29 CFR 1926.1501 may be specific to equipment that can hoist, lower, and horizontally move a suspended load, all equipment operating within a right-of-way shall maintain the clearances specified in these regulations, including but not limited to cranes, backhoes, excavators, forklifts, pile drivers, and drill-rigs.

a In accordance with 1926.1408, if the Requestor asks to encroach upon the 20 foot clearance requirement and requests voltages of electric lines near the proposed work or activity, the Requestor shall provide an aerial photograph or detailed survey plan delineating the area of work or activity in proximity to electric lines and structures. Requests may be emailed to TransmissionEngineering@NationalGrid.com or mailed to

National Grid c/o Transmission Engineering, 40 Sylvan Road, Waltham, MA 02451.

2.2 The Requestor shall not place or store any items within the right-of-way, including construction materials or debris, excavated soil, trailers, or storage containers.

2.3 The Requestor shall not unload or load vehicles or equipment within the right-of-way.

2.4 The Requestor shall adequately ground vehicles, equipment, fences and gates, at all times and in accordance with applicable Federal, state, and local laws, statutes, rules, regulations, and design codes, including, but not limited to, those listed in paragraph A above and IEEE Standard 80.

3.0 Protection of Transmission Line Facilities

3.1 The Requestor shall, at all times, protect transmission line facilities from damage. In addition to compliance with safety codes as described in paragraph 1 above, protection of transmission facilities shall, as a minimum, include the following:

3.1.1 The Requestor shall operate equipment and vehicles at least 50 feet horizontally away from any transmission line pole, tower, guy wire, or guy anchor.

3.1.2 When making a rough cut during excavation, the Requestor shall disturb no earth within an area bounded by a line drawn 25 feet plus 2.5 times the depth of the cut from the nearest transmission line pole, tower leg, guy wire, or guy anchor, but not less than 50 feet. Upon completion of the rough cut, the slopes of the bank shall be graded on a slope no steeper than one vertical to five horizontal and stabilized with vegetation or rip-rap. The top of the slope shall be at least 50 feet from the nearest pole, tower leg, guy wire, or guy anchor.

3.1.3 The Requestor shall not store or use explosives within the right-of-way.

3.1.4 The Requestor shall locate all ground wires buried in areas to be excavated and shall protect them against damage. If a buried ground wire is broken, the Requestor shall prevent anyone from touching it and shall notify National Grid.

4.0 Access to Right-of-way

4.1 The Requestor shall not at any time block or impede access to or along the right-of-way.

4.2 The Requestor shall not damage roads or trails used to gain access to or along the right-of-way.

4.3 All underground utilities and all proposed bituminous and/or concrete drive surfaces and underground utilities shall be designed to withstand and meet AASHTO *Standard Specifications for Bridges and Highways* H-20 highway class design criteria for vehicular loading.

5.0 Preservation of Rights and Future Use

5.1 National Grid retains all rights granted in the original right-of-way deed. Specifically, National Grid reserves the right to place future structures or relocate existing structures anywhere within the right-of-way, and reserve the right to control any vegetation within the right-of-way.

5.2 The Requestor shall place no above or below ground structures within the right-of-way, including streetlights, signs, sheds, fences, septic systems, and swimming pools.

5.3 Improvements shall not continuously occupy more than 100 feet along any line drawn longitudinally along the right-of-way.

5.4 Improvements shall not occupy expected future locations of transmission structures. This includes the bisector of angles in the right-of-way and generally includes areas adjacent to existing structures.

6.0 Protection of Interests

6.1 National Grid shall not be held liable for any damage to the Requestor's activities within the right-of-way when such damage is the result of construction, maintenance, or operation or other use of existing or future transmission line facilities.

6.1.1 For any proposed underground pipe or conduit the Requestor shall provide warning tape in the trench for all and tracer cable for non-metallic pipes or conduits when located within a transmission corridor. Plans provided for review shall identify such warning tape and tracer cable.

6.1.2 All newly installed pipes and conduits shall be marked in the field using three sided markers. A specification will be provided the Requestor as needed.

6.2 The Requestor shall pay all costs associated with modifications or repairs made necessary to National Grid's facilities as a result of activities by the Requestor, including the cost of repairs or modifications to buried ground wires. Repairs and/or modifications shall be performed by National Grid. The Requestor shall notify National Grid's Manager of Transmission Engineering Services when a buried wire is damaged.

6.3 The Requestor shall notify National Grid in writing at least 24 hours before the start of the work. In New York the notification shall also be made in accordance with the requirements of the High Voltage Proximity Act (Section 57.7).

6.4 Electrostatic currents may occur in proximity to electric transmission lines under certain circumstances. Although people may experience annoying shocks due to these currents when touching conductive objects, National Grid is not able to eliminate the currents. The steady-state current due to these electrostatic effects is within the limits established by the National Electrical Safety Code.

7.0 Deliverables

7.1 Full-sized paper copies of plans prepared to an appropriate scale shall be provided by the Requestor. Plans shall be certified by an appropriate professional licensed in the state in which the project is located. Digital signatures of a licensed professional will not be accepted. If plans are acceptable and an agreement can be achieved, the Requestor shall provide final plans in both paper and pdf versions.

7.2 Upon completion of any development located within a transmission corridor, Requestor shall provide upon request by Transmission Engineering, a certified As-Built Plan. Plan shall be certified by a licensed professional.

Appendix A

Procedure for Determining Wire Heights

- Elevations of conductors (wires) should be taken* at the point of attachments at bottom insulator on transmission structure.
- Elevations should be taken* at mid-span and quarter-span.
- Elevations should be taken* at any obvious low points (other than mid-point) which may occur due to grade changes below.
- Elevations should be taken directly above any proposed improvements or areas of proposed activity(s) as applicable.
- Existing grade elevations corresponding to aerial shots cited above should also be recorded. Any proposed finish grades different from existing grades, should also be recorded.
- As measurements are recorded, the following information must be recorded: date, time, ambient air temperature, wind direction and velocity, and weather conditions (e.g.: sunny, rain, snow, etc).

* WARNING: Conductors are electrically energized and are to be considered dangerous to approach. All measurements to conductors shall be made by remote measurement techniques which shall in no case cause measuring devices or personnel to come within safety parameters established by OSHA 1926.550 or New York State's High Voltage Proximity Act.

c = clearance from grade

H = measured horizontal offset distance (perpendicular to conductor at point of crossing)

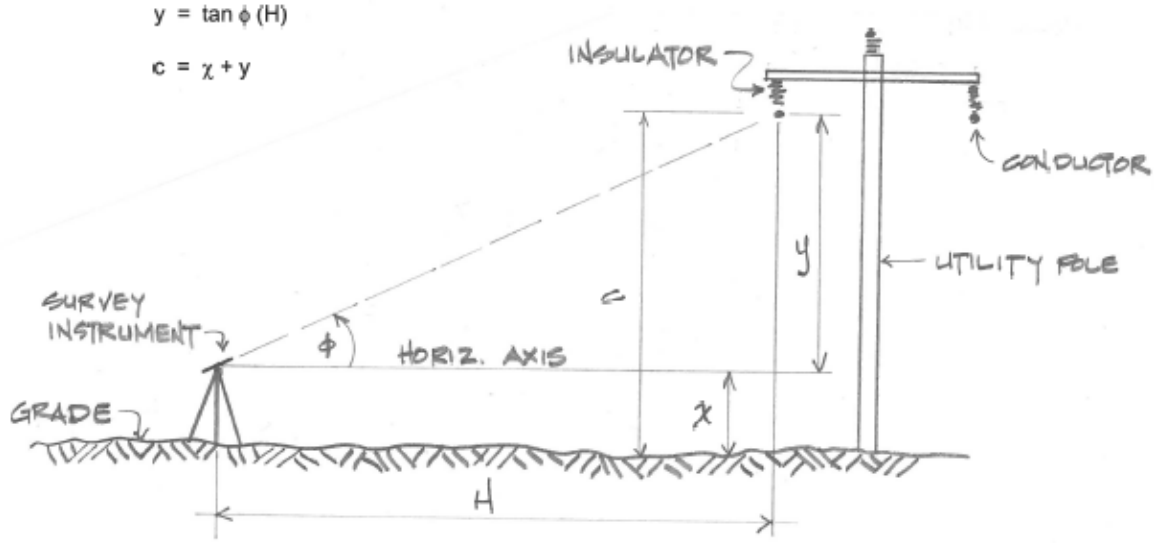
χ = measured vertical distance from horizontal axis of instrument eye piece to grade at a point

ϕ = measured vertical angle from horizontal axis of instrument eye piece to conductor

y = calculated vertical distance from horizontal axis to conductor

$y = \tan \phi \, (H)$

$c = \chi + y$



Revision History

Version	Date	Revision	Author	Reviewer	Approver
1.2	07/12/2007	Revised wording relative to electrostatic currents in paragraph 6.D.to clarify the issue. Previous wording: "Mild shocks due to electrostatic currents may be felt when touching conductive objects, such as vehicles, located within the right-of-way. Although these shocks may be annoying, National Grid will not be able to eliminate them."	Mark Browne		Mark Browne
1.3	11/29/2010	Clarify that guideline applies to electric transmission rights of way Clarify that activities must comply with requirements for the voltages of lines within the right of way Add requirement to comply with MGL Chapter 166 Section 21A	Mark Browne		Mark Browne
1.4	07/11/2012	Added AASHTO H-20 load criteria requirement for proposed drive surfaces and u/g utilities.	Keith Tornifoglio		Mark Browne
1.5	03/17/2014	Added Appendix A, full-sized hardcopies to-scale, and warning tape and tracer cable for buried utilities	Keith Tornifoglio		Mark Browne
1.6	07/18/2014	OSHA clearances	Keith Tornifoglio		Mark Browne

WLADIS LAW FIRM
THE NEW STANDARD IN CLIENT SERVICE

Kevin C. Murphy, Esq.
kmurphy@wladislawfirm.com

December 17, 2014

Via E-Mail (Richard.Mustico@dec.ny.gov)

Richard Mustico
NYS Department of Environmental Conservation
Division of Environmental remediation
625 Broadway
Albany, NY 12233-7013

RE: November, 2014 Proposed Plan for the General Motors – Inland Fisher Guide Site, Operable Unit 2, Sub-Site of the Onondaga Lake Superfund Site, Town of Salina, Onondaga County, New York

Onondaga County, NY Comments on the Proposed Plan

Dear Mr. Mustico:

Onondaga County, New York welcomes the opportunity to comment on the Proposed Plan for the General Motors – Inland Fisher Guide Site, Operable Unit 2, Lower Ley Creek Sub-Site of the Onondaga Lake Superfund Site, Town of Salina, Onondaga County, New York.

To do so, the County submits it is necessary to place the County's comments in the full context of the history of the subsite, as designated, and the site as a whole.

I. Overall Site History

It is known and recognized by NYSDEC and the United States Environmental Protection Agency (USEPA) that General Motors Corporation (GM) was unquestionably the largest source of contaminants found in Ley Creek.

On August 12, 1985 GM executed a consent order with NYSDEC (Case #7-0383) to (a) address the on-going discharge to Ley Creek of waste waters from its Salina facility contaminated with, among other pollutants, two types of PCB, Aroclor 1242 and Aroclor 1248, and (b) limit any such future discharges.

An evaluation of the extent of the resulting PCB contamination in and about Ley Creek was inexplicably delayed until 1997 when a subsequent order was entered between NYSDEC and GM. In 1997, NYSDEC alleged that the PCB contamination of Ley Creek dredge spoils was "the result of discharges of contaminated wastewater primarily from operations of" GM's Salina, NY facility and determined it was necessary

to "undertake additional investigation in Ley Creek sediments and surface water" downstream of the GM facility.

After 10 additional years passed, in 2007, NYSDEC stated it had "confirmed" GM's discharge of PCBs to Ley Creek. As a result, NYSDEC determined the GM facility was a subsite of the Onondaga Lake NPL site."

Ultimately, NYSDEC and USEPA jointly notified GM of their determination that the General Motors Corporation's Salina Facility was a subsite of the Onondaga Lake NPL site and the resulting investigations of Ley Creek confirmed the presence of PCB-contaminated surface water and sediment in Ley Creek downstream of the GM facility.

Thereafter, the United States arbitrarily divided Ley Creek into two sites: upper Ley Creek, upstream of the Route 11 bridge, and lower Ley Creek, downstream of the Route 11 bridge. It did so despite having determined that the GM site was a subsite of the Onondaga Lake superfund site located at the terminus of Ley Creek, the absence of any physical barrier at the Route 11 bridge that would preclude the transport of GM waste beyond the Route 11 bridge, and an existing NYSDEC Order that, the County submits, required GM to investigate the length of Ley Creek. Unfortunately, that decision artificially limited GM's legal and financial responsibility to pay its proportionate share of the cost of remediation for the entirety of Ley Creek, including "Old Ley Creek."

It is critical that if the entirety of the Creek is not going to be subject to primary oversight by a single government regulator, whether that be USEPA or NYSDEC, that the regulators work cooperatively and in harmony to secure an overall result that is protective of human health and the environment without actual or perceived differences in the remedy and in a manner that is cost-effective and efficient for all parties concerned, especially given the impact of the General Motors Corporation bankruptcy.

II. The Proposed Plan

Onondaga County submits the Proposed Plan raises the following issues:

- A lack of consistency between the remedy proposed for upper Ley Creek and the remedy selected by USEPA and agreed to by NYSDEC with respect to lower Ley Creek;

- A failure in the Plan as proposed to adequately address both the need for coordination with response efforts related to lower Ley Creek and potential impacts of the Plan as proposed on flooding and flood control issues with respect to the entirety of the Creek; and

- The proposed timing of the implementation of the Plan given that the source areas are subject to continuing investigation and have not yet been remediated while at the same time the now-RACER Trust facility continues to discharge PCBs to Ley Creek. Given the above deficiencies, the projected cost options are

based on poorly defined remedial endpoints and insufficient field data and thus, the Proposed Plan comparison of remedies is of limited utility.

III. Consistency in Remedy Selection

The remedy selected by USEPA for that portion of the Creek downstream of the Route 11 bridge and proposed by NYSDEC for that portion of the Creek upstream of the bridge respectively, both require or propose the removal of sediment and soils in or abutting the Creek. Both require or propose the removal of soils and sediment that contain concentrations of PCB ≥ 1 mg/kg.

1. Soil Removal

Concerning the soil removal remedy, the USEPA Record of Decision states, at 23-24, as follows:

> Any contaminated soil located on the northern bank of the Creek that cannot be safely excavated because of the presence of the two large buried natural gas and oil pipelines which run parallel to a portion of the northern bank of the Creek would be covered with one foot of soil. Prior to placing the soil cover, soil samples would be collected to document the contaminant concentrations and a readily-visible and permeable subsurface demarcation layer delineating the interface between the contaminated soils and the clean soil cover would be installed.
>
> * * *
>
> The excavated areas would be backfilled with at least two feet of soil that would meet NYSDEC Program Policy Division of Environmental Remediation (DER)-10, Appendix 5. The excavated wetland area would be backfilled with soil that meets unrestricted SCOs since this area is considered ecologically sensitive. In excavated areas where there is underlying municipal refuse, a readily-visible and permeable subsurface demarcation layer delineating the interface between the refuse and the clean soil cover would be required.

The NYSDEC Proposed Plan for the Creek upstream of the Route 11 bridge states, at 15, as follows with respect to the proposed soil removal component of the remedy:

> There are limited areas where underground utilities are present at the Site. Due to the potential health and safety threat of excavating around and beneath underground utilities, soil may remain at concentrations above restricted SCOs in some areas following excavation. This would be

> addressed by a soil cover, institutional controls and as part of a Site Management Plan.
>
> * * *
>
> Clean fill meeting the requirements of the NYSDEC Technical guidance for Site Investigation and Remediation (DER-10), Appendix 5, would be brought in to replace excavated soil or complete the backfilling of the excavation and establish the designated grades at the Site. With the exception of Factory Avenue Area and Factory Avenue/LeMoyne Avenue Intersection Area excavations, excavated areas would be restored with clean substrate and vegetation as per an approved habitat restoration plan developed as part of the design. Excavated areas along Factory Avenue would be restored with a cover which would consist of an indicator fabric layer, as needed (e.g., for soil in the vicinity of underground utilities), overlain by 12 inches of clean soil (minimum) and a top layer consisting of vegetation, asphalt, gravel, as appropriate for the area being restored.

2. Sediment Removal

Concerning sediment removal, the USEPA Record of Decision states, at 27 and 28, as follows:

> At least one-foot of clean fill would be placed over the excavated areas to stabilize the sediment bed and support habitat replacement/reconstruction.
>
> While long-term monitoring of the sediment would not be required because all the contaminated sediment above cleanup levels would be excavated, fish monitoring would be conducted to determine the remaining levels of contamination in the fish and the rate of decline.

The NYSDEC Proposed Plan with respect to upstream sediment removal states, at 14, as follows:

> Habitat restoration of Ley Creek would consist of placement of at least 0.5 feet of substrate similar to the existing sediments over disturbed areas and restoration of vegetation. The specific thickness and substrate material to be used for the backfill in these areas would be determined during the remedial design as part of the habitat restoration plan.
>
> This alternative would result in contaminants remaining on site.

3. Remedy Consistency

A. Fill Placement after Removal

In sum, absent further explanation, the post-excavation soil or sediment cover requirements materially vary depending on whether the location of the remedy is downstream or upstream of the Route 11 bridge. As compared to the NYSDEC proposal, the USEPA Record of Decision is either more conservative or unnecessarily over-protective. Given that the Record of Decision and the Proposed Plan are both subject review and acceptance by NYSDEC or USEAP, the discrepancy in post-excavation fill placement requirements should be eliminated and the post-removal fill obligations should be uniform on either side of the bridge.

B. Remediation Standard and Contaminant Removal

More concerning is that the USEPA Record of Decision states that for locations downstream of the bridge "all the contaminated sediment above cleanup levels would be excavated." Despite that decision by USEPA, NYSDEC has not proposed the implementation of Sediment Alternative 4, which "would remove ... all of the contaminants in on-Site sediment." Rather, at a present-worth cost savings of $2,390,000, NYSDEC has proposed to implement select Sediment Alternative 3, which "would result in contaminants remaining on-Site above levels that allow for unlimited exposure." There appears to be a discrepancy in the remedy selected downstream of the bridge and the remedy proposed for upstream of the bridge. Absent an explanation that resolves the apparent discrepancy, the County submits that NYSDEC should give additional consideration to selecting Sediment Alternative 4, especially given the Record of Decision for sediment downstream of the bridge and the downstream reach of the Creek having previously been determined by USEPA and NYSDEC to be a receptor of upstream contaminants.

4. Flood Control and Infrastructure

Ley Creek and its branches have a history of flooding, including major floods in March, 1950, 1960 and 1964; May, 1969; June, 1972; July, 1974; and September, 1976. *See e.g.* attached Plate 1 from *Flood of June 1972: Onondaga Lake and Ley Creek at Syracuse, New York 1972*, Shindel, H. L. USGS Open-File Report: 72-346. http://pubs.er.usgs.gov/publication/ofr72346

More recently, the town of DeWitt, which is upstream of the Town of Salina, has been beset with flooding from Ley Creek. Before the year 2000, DeWitt reportedly never received more than four inches of rain in a 24-hour period. Since 2000, the town has had rainfalls totaling more than four inches five or six times in a 24-hour period. The Creek flows through the northern neighborhoods of the town, and as explained by the Town Supervisor, "Ley Creek is very flat – it's not your typical watershed ... because it's very flat, a lot of water tends to flood."
http://www.eaglebulletin.com/news/2014/may/07/dewitt-encouraging-residents-save-rain-rain-barrel/

The flooding risk that Ley Creek presents and the need to manage the Creek are both further highlighted in the FEMA Flood Insurance Study for Onondaga County. In addition, the Town of Salina Hazard Mitigation Plan highlights the need for on-going channel inspection, debris removal and maintenance. Attachment A contains excerpts from the Flood Insurance Study and a copy of the Hazard Mitigation Plan [can be reviewed at http://www.ongov.net/planning/haz/documents/Section9.28-TownofSalina.pdf/is enclosed].

In addition to the above, the Onondaga County Ley Creek trunk sewer crosses the Creek in the area of study and potentially is located in an area of proposed soil or sediment excavation.

Given the above, the County has the following concerns and questions.

- The maintenance of existing utilities and the future need to inspect, maintain and improve existing utility infrastructure is significantly impacted by the existence of remaining contaminants. The Proposed Plan provides limited information or data when it comes to defining the actual or potential impact on existing infrastructure.

- As the remedial development process proceeds, how will the Proposed Plan address the potential impacts on the Bear Trap-Ley Creek Drainage District and the Ley Creek trunk sewer?

  The final design needs to confirm whether the remedy will impact this sewer, and if so, incorporate provisions to allow for future utility maintenance.

- The Ley Creek channel is very flat and has little fall from the upper drainage areas to the mouth of Onondaga Lake and is impacted significantly by the elevation of Onondaga Lake. How will the Proposed Plan assure that the flood district residents are protected from flooding and the environment is protected from the mobilization of pollutants during implementation of the remedy, especially given the proposal to dredge in the wet?

- Did the Feasibility Study of the Proposed Plan investigate the cost to divert or channel the Creek to eliminate the need to dredge in the wet? If not, why not? If yes, what were the estimated costs and why was that option not included in the Feasibility Study of the Proposed Plan?

- As the design and implementation of the proposed and/or selected remedies proceed what effort will the Agency make to assure that future flood mitigation meets or exceeds the current channel capacity? What steps will be taken to coordinate the design and plan with FEMA, local municipalities, utilities, residents, etc.?

- What opportunities does NYSDEC envision to expand the floodway to offer greater flood protection as either a necessary aspect of the proposed remedy or an added/modified design feature (e.g., less capping material)?

- How will proposed institutional controls impact the Ley Creek Drainage District? What restrictions or limitations will be placed on the properties that are incorporated into the District by virtue of their proximity to Ley Creek? For example, will the institutional restrictions preclude further upgrades to, or installation of additional drainage and/or wastewater facilities?

5. Coordination and Timing of the OU2 Remedy

- The County submits the issues identified above support further collaboration if not a single, joint NYSDEC/USEPA effort to address the PCB contamination of Ley Creek by GM-IFG. Both cost savings and unity of remedy selection demand greater and better coordinated efforts to address the Creek, especially given the limited resources that were extracted in the bankruptcy process from GM-IFG, the overwhelming, if not sole, contributor of the PCB issues being addressed by two independent and less than efficiently coordinated efforts by NYSDEC and USEPA.

  What steps are and will be taken to coordinate the implementation of the upper and lower Ley Creek remedies?

  What steps will be taken to insure that the upper Ley Creek remedy does not increase the cost of implementing the lower Ley Creek remedy?

  What cost saving or efficiency opportunities had NYSDEC identified in an effort to minimize the inefficiency of the current process?

- Perhaps of greater import, a review of NYSDEC records indicates that as recently as November, 2012, the RACER Trust discharged to Ley Creek from its stormwater treatment system concentrations of PCBs in violation of its existing SPDES permit and the system itself has a history of overflowing and discharging untreated waters to Ley Creek.

  What actions are being taken to permanently cease any and all on-going or future PCB discharges by the RACER Trust?

  What is the impact of these on-going RACER Trust PCB discharges on Ley Creek and its environs, including Onondaga Lake?

  Is PCB-contaminated groundwater discharging from the GM-IFG facility to Ley Creek? If yes, the proposed remedy should be delayed until such time that all groundwater discharges are eliminated.

- Given the above concerns, the County submits the selection of a remedy for upper Ley Creek should await the outcome of the GM-IFG facility OU 1 investigation and remedy selection and implementation process.

6. Sediment Dewatering

- As NYSDEC may be aware, the Onondaga County Sanitary District generally will not accept leachate from a Class 2 New York hazardous waste site absent a compelling public need, and only if the resulting discharges meet all applicable legal requirements.

  With this in mind, assuming that the contemplated remedy includes the discharge of wastewaters from sediment dewatering to the METRO WWTP:

  a. What is the potential volume of wastewater that for which the RACER Trust may seek disposal at METRO?

  b. Will pretreatment of these wastewaters be necessary?

  c. What provisions will be made to cease pumping during periods of wet weather and/or peak periods of I&I?

Should you or the Department have any questions or comments or require further clarification or information regarding the above comments please do not hesitate to contact David Coburn, the Director of the Onondaga County Office of Environment at 315/435-2647 or the undersigned.

Very truly yours
THE WLADIS LAW FIRM, P.C.

Kevin C. Murphy

KCM/cm

Enclosure

Cc: Luis A. Mendez, Esq. (via email)
David Coburn (via email)

ATTACHMENT A

Flood Insurance Study, vol. 1 of 2, ONONDAGA COUNTY,
NEW YORK (ALL JURISDICTIONS), Federal Emergency Management Agency
FLOOD INSURANCE STUDY NUMBER 36067CV001A

At page 14, Town of Dewitt:
In the Town of DeWitt, problems on the two major flooding sources, Ley Creek and Butternut Creek, occur primarily in the Erie-Ontario lowland portion of the town.

The channels of the North Branch Ley Creek and South Branch Ley Creek convey runoff to their confluence. At this point, the creek slope is generally insufficient to carry the flow within its channels, and the nearby area becomes flooded. The situation occurs during the annual spring snow-melt runoff, and on frequent occasions following long-duration rainstorms.

At page 19, Town of Salina:
In the Town of Salina, flooding problems occur along the floodplains of Bloody Brook, Ley Creek and Bear Trap Creek. Low-lying areas adjacent to Onondaga Lake are flooded whenever a rise in the water level of the lake occurs. Flooding in the lower portion of Ley Creek occurs due to a reduction in the channel slope downstream of the confluence of the north and south branches. Flooding is the most common in the spring when snowmelt runoff occurs, following long duration rainstorms, and is further aggravated by frozen or previously saturated soil. During the spring snowmelt, widespread flooding and damages occurred in March 1950, March 1960 and March 1964. Flooding, which was the result of a rainstorm in May 1966 had an estimated 6-year recurrence interval and resulted in over $90,000 in damages. The flood of record occurred in June 1972 during Tropical Storm Agnes and resulted in widespread damages. The flood had a recorded discharge of 17,200 cfs at *gaging* (sic) station No. 4-22375, in Baldwinsville. The flood had an estimated recurrence interval of 20 years on the Seneca River.

At pages 20-2, City of Syracuse:
The principal flooding sources in the city are Harbor Brook, Meadow Brook, Ley Creek and Onondaga Lake. Heavy rains, especially those occurring in the spring which combined with snowmelt, have frequently caused high water and local flooding. Some of the more frequent flooding occurs in the area north of Rowland Street and west of Geddes Street, caused by Harbor Brook, and the areas west of MacArthur Stadium and southwest of the Seventh Street bridge, both caused by Ley Creek.

LAW OFFICE OF JOSEPH J. HEATH
GENERAL COUNSEL FOR THE ONONDAGA NATION
512 JAMESVILLE AVENUE
SYRACUSE, NEW YORK 13210-1502
315-475-2559
Facsimile
315-475-2465

December 17, 2014

VIA ELECTRONIC MAIL

Richard Mustico
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233
Richard.Mustico@dec.ny.gov

Re: Public Comments on Draft Proposed Remedial Action Plan for General Motors-Inland Fisher Guide Operable Unit 2

Dear Mr. Mustico:

I am submitting the following comments on the Draft Proposed Remedial Action Plan (PRAP) for the General Motors Inland Fisher Guide Operable Unit 2 (GM-IFG OU2) subsite on behalf of the Onondaga Nation, a federally recognized Indian Nation occupying the currently recognized Onondaga Nation Territory within Onondaga County, New York. The Nation has already provided the Department of Environmental Conservation (DEC) with comments regarding this draft PRAP in a government-to-government capacity pursuant to the DEC's consultation obligations with Indian Nations. Having discussed those comments with DEC staff, I am reiterating our continuing concerns as part of the public comment process.

As noted in many prior comments and during consultation on this project, the Nation strongly prefers remedial alternatives that directly remove contaminants from the areas on or around Onondaga Lake and ensure the greatest degree of public safety. The Onondaga Nation is the Firekeeper or central council fire of the Haudenosaunee, which is composed of the Mohawk, Oneida, Onondaga, Cayuga, Seneca, and Tuscarora Nations. Onondaga Lake is sacred to the Onondaga and Haudenosaunee people and the Lake and its tributaries were central to the Nation's way of life, providing material goods such as fish, food and medicinal plants, and salt. The Nation has an obligation to care for the lands on which we all live, to ensure that wildlife and natural areas are protected, and to work toward providing clean air and water for future generations. We are concerned that the PRAP for this site, as with other remediation plans for the area, relegates Ley Creek to a permanently contaminated state.

In particular, we are concerned with the DEC's apparent reliance on the continued applicability of the current restrictive fish advisory to limit human exposure to PCBs from fish consumption to acceptable levels. Traditionally, the Nation relied heavily on fish caught in Onondaga Lake and its tributaries. The continued contamination of these resources significantly damages or altogether precludes such traditional uses. Any PRAP adopted by DEC should allow for the lifting of fish consumption restrictions – if not immediately, then at some identifiable point in the future. Similarly, we support relying on unrestricted use standards for soil remediation, which provide for the broadest possible future uses at these sites. Unrestricted use soil standard also provide greater assurance that these contaminated areas will not discharge PCBs or other hazardous substances to Ley Creek and Onondaga Lake in the future.

Because there are no DEC or EPA cleanup standards for PCB-contaminated sediment, the PRAP relies on a "risk-based" remediation goal of 1 ppm PCBs in sediment. The derivation of this value is unexplained in the PRAP, which simply note that the standard has been adopted in other New York State hazardous waste sites and is "protective of human health and the environment for this site." In addition, the supporting documents fail to provide a valid reason to discard other "risk-based clean-up levels" considered during the Feasibility Study stage. Sediment Alternative 4, for example, would set a remediation goal of 0.28 ppm for PCBs, which is described as the average upstream sediment concentration for PCBs, and is economically and technically viable. Other remediation alternatives that would have set a PRG of 0.2 ppm for PCBs were apparently eliminated from consideration as infeasible, because they also incorporated remediation goals for trivalent chromium, copper, and nickel lower than the levels that could be documented in clean fill. (GM IFG OU2 FS Addendum, June 2014.) However, this explanation fails to recognize that the PCB-remediation goals incorporated in the rejected alternative were apparently achievable. In addition, the PRAP acknowledges that PCB levels in fish tissue and invertebrates are significantly higher within the OU2-related areas of Ley Creek than in upstream regions, meaning that this subsite is contributing to the on-going contamination of Onondaga Lake, its tributaries and its natural resources. Rather than eliminating this contribution by remediating to a level as clean as or cleaner than upstream sources, DEC appears to have selected a remediation goal which simply reduces contamination to more acceptable levels.

Given that PCBs are the key threat for this site and one of the primary reasons for the continuing fish advisories in Onondaga Lake and its tributaries, more protective alternatives surely deserved greater consideration. Under either standard, DEC should assess whether, at some point in the future, any risk-based standard chosen will ensure that PCB levels in fish are sufficiently low to allow unrestricted consumption – which should surely be the goal of the PRAP. Instead, as currently drafted, the PRAP acknowledges that PCB-contamination in Ley Creek will not be reduced to levels that meet this goal and essentially relies on the continued applicability of fish consumption advisories to protect public health.

Even the most restrictive sediment alternative (Alternative 4) allows PCBs to remain in the Creek sediments at "background levels." Given that PCBs are entirely man-made substances, this "background level" is related to the universally contaminated state of the Onondaga Lake watershed, not natural or safe levels. Again, the Nation is concerned that even the most protective clean-up level considered presumes that Ley Creek will remain contaminated by man-made pollutants in perpetuity. While we recognize that there may be limited value in setting downstream PCB remediation goals lower than existing upstream levels, we believe that there is value in moving toward the lowest sustainable contaminant level. The "background" level of 0.28 ppm or the rejected risk-based level of 0.2 ppm at least approaches that level.

For all these reasons, the Nation supports a more protective remediation goal, such as Sediment Alternative 4 and Soil Alternative 3m rather than the proposed Sediment Alternative 3 and Soil Alternative 2. While the Nation's preferred alternatives may be slightly more expensive, we believe these costs are more than justified by their potential to support a fully restored Ley Creek and the permanent removal of potential contaminants to Ley Creek and Onondaga Lake.

Thank you for your attention to these comments. Please let me know if you have any questions.

Sincerely,

Alma Lowry

Alma Lowry
Of Counsel

cc: Onondaga Nation Council of Chiefs

Mustico, Richard (DEC)

From: Steve Apelman <GFRestorations@optimum.net>
Sent: Tuesday, January 20, 2015 3:25 PM
To: Mustico, Richard (DEC)
Subject: GM– Inland Fisher Guide; Onondaga Lake Superfund site.

Mr. Richard Mustico,
Project Manager, N.Y.S. Department of Environmental Conservation,
Division of Environmental Remediation,
625 Broadway, Albany, NY 12233-7013

BioTech and Greenfield Restorations Inc. would like to introduce your office to the same technology that has previously been introduced and recognized by Bill Ottoway of your organization.

The Inland Fisher project, with more than 25,000 cubic yards of PCB contamination will cost quite a large sum to dig and haul, which has always been the remediation method of choice.

As the DEC's Bill Ottoway can attest to , as well as the office of the California EPA that has selected our technology as the *preferred method of remediation for contamination in that State*, we can eliminate all the cost of digging and hauling, as well as the cost of locating large amounts of clean fill and the associated costs of bringing that fill back to the excavation site.

Our methods are purely biological, non-toxic, safe to use and handle. and have more than a *decade of field proven effectiveness*. Our technology has never failed to meet clean up goals.

I would appreciate the opportunity to show how our technology can save huge amounts of money and time in this remediation project. Once you become familiar with the technology and its proven track record, you will recognize its capacity to save the State of New York vast amounts of money, allowing for more sites to be cleaned with the same budget.

Steve Apelman, President

Tim Cook, V.P of Operations

Greenfield Restorations

gfrestorations@optimum.net

Office: 631-698-3357

Mobile: 631-332-6877

Dear Mr. Hesler,

Thank you for the Appendix 5 document, DER-10. I forwarded this document to Mr. John Burns, of Nobel Metals Extraction, LLC. He replied, reaffirming that the configuration which he proposed (see attached) is capable of accomplishing the goals defined in the DER-10 document. For removal of metals from the sand, which has been heated and dried, the Noble Metals system employs "Air Classification and Separation" technology. He states that the technology is in widespread use. I have attached the "Introduction to Air Classification" document to which he referred for an introduction.

This document led me to additional references to this technology. The Sturtevant, Inc. brochure is attached, as an example, from a firm that provides several models of air classifiers. Another firm which offers a variety of air classifier models is RSG, Inc., which supplies a web-site at: www.airclassify.com. Moreover, an Air Classifier overview is provided at: http://en.wikipedia.org/wiki/Air_classifier.

There are dozens of suppliers of Thermal Desorption systems. Many of them are experienced in removing metals from sand and soil using Air Classification technologies.
A lengthy list of them is available at: http://www.environmental-expert.com/companies/keyword-soil-remediation-1020/page26. Certainly, these technologies are mature and reliable, and available nation-wide.

Mr. Burns stated to me that none of his technology is patented and, therefore, he is wary of exposing the details, at a distance, of his use of the metal air classification and separation process. I have attached his original letter in which he described his thermal system. He described it to me as an iterative process, in which the various metals are sequentially removed based on differential particle sizes. A grinding process reduces the particles to nearly uniform, small sizes. Then differential specific gravities are iteratively employed to remove small, uniform particles. I recommended to Mr. Burns that he make a detailed presentation to the N.Y.S. D.E.C., in the headquarters, at Albany. Therefore, I am urging that an opportunity be extended for him to do so, in the near future.

For comparison, I have also attached the "Cost and Performance Summary Report" for the use of thermal desorption technology at the Sand Creek site in Colorado, during the 1990's. Note, especially, that no air classifier technology was incorporated in that project.

A Thermal Desorption with Air Classifier system would make it possible to achieve the D.E.C. Policy objective which is defined in the Final Commissioner Policy, CP-51. The policy declaration is: "D.E.C.'s preference is that remedial programs, including the selection of soil cleanup levels, be designed such that the performance standard results in the implementation of a permanent remedy resulting in no future land use restrictions". I have not learned of any other technology or process which will accomplish this objective. We should favor deployment of these available technologies to remediate our inherited environmental problems, and recover the unrestricted use of our landscape.

Economic development, property values, and the social, recreational and cultural life of our community all improve when toxic landfills are avoided in our townships. And, we can achieve this beneficial outcome within our existing budgets.

Thank you for your kind attention.

Robert Papworth
Syracuse, N.Y
(315) 471-0914
rppwrth@verizon.net

Buell
Division of
Fisher-Klosterman, Inc.

Introduction to Air Classification

I. Definition of Air Classification

Air classification is a process of *approximate* sizing of dry mixtures of different particle sizes into groups or grades at cutpoints ranging from 10 mesh to sub-mesh sizes. Air classifiers complement screens in applications requiring cutpoints below commercial screen sizes and supplement sieves and screens for coarser cuts where the special advantages of air classification warrant it. *Air sizing is the counterpart of water classification.*

2. Primary Applications

The applications of air classification are many and varied. Some of the more important uses are:

a. Scalping off of the coarse end from a pulverized product, usually for further milling. This prevents overgrinding and saves power.

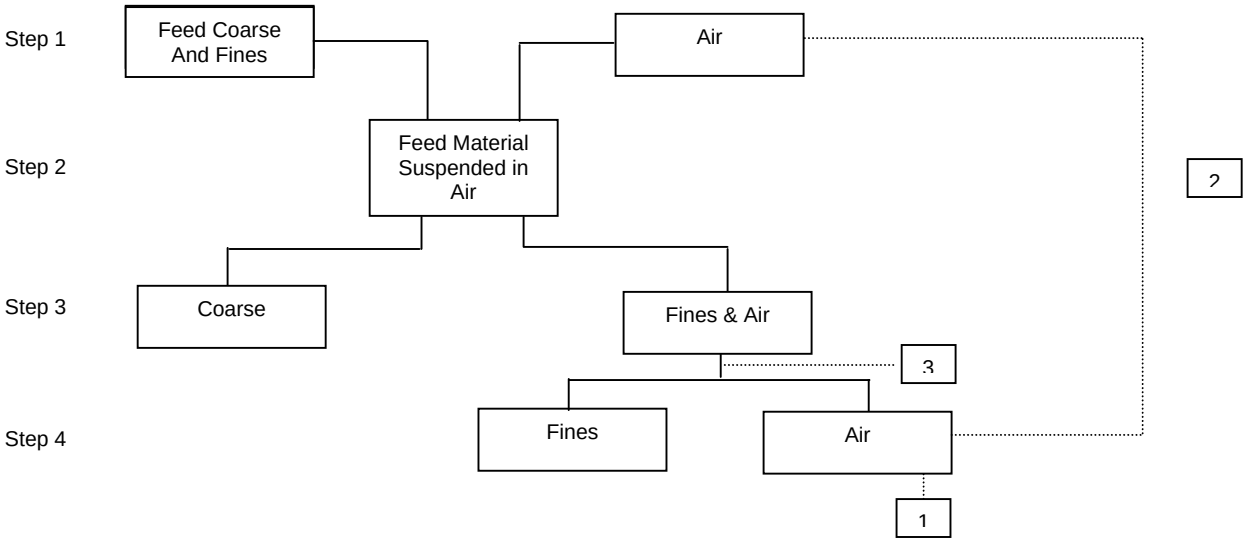
b. The "tailoring" of several size fractions from a heterogeneous mixture of particulate matter. In this application, each fraction has a different particle size distribution meeting commercial specifications or requirements of a dry beneficiation process.

c. The scalping off of the fine end of the product for "de-dusting," "de-fuming" or changing the flow, apparent density or other physical characteristics of the coarse fraction.

d. Beneficiation of a mixture by the removal of impurities contained in a narrow particle size range of the mixture or the separation of mixed products having substantial difference in settling velocities in an air stream.

3. Principles of Operation

All air classifying devices employ the process steps shown in Figure 1.below:



Step I - Suspension of the feed material to be classified in an air stream. Step I is sometimes completely separated from the classification process as when the classifier is handling an air-solids stream from an air-swept mill.

Step II - Introduction of the air-solids stream in the classification zone.

Step III - Separation of the coarse fraction from the fine fraction and air stream by opposing the drag force created by the air with gravitational, inertial or centrifugal force or a combination of them. The drag force is proportional to the first power of a particle's diameter. Inertial or centrifugal force is proportional to the cube of the particle's diameter. If the particle is small enough, it will move with the air stream. If the forces are equal, the particle will be held in equilibrium. This equilibrium determines the cutpoint of an ideal classifier. *The cutpoint therefore is equal to the particle size that has a 50-50 chance of ending in the fine fraction or coarse fraction.* In some applications, it is necessary to remove part of the air stream with the coarse fraction to facilitate the removal of the coarse particles.

Step IV - Separation and collection of the fine fraction from the air stream. The air is either released to atmosphere (1) to form an "open air system" or recirculated (2) to form a "closed air system." Step IV is sometimes eliminated with the fines and air mixture going to another process (3) such as another classifier or a direct-fired, pulverized coal burner, etc.

A theoretically perfect air classifier would combine the above four steps in such a way as to assure that all particles are perfectly diffused in the air stream as discreet particles. Each particle must then be subjected to the same air velocities to induce a drag force proportional to their size. This drag force, in turn, must be opposed by a gravitational, inertial or centrifugal force or combination thereof, acting equally on each particle so that they must be only proportional to the particle's mass. Means must then be found to collect the coarse particles without their colliding with the fine particles which are traveling in the opposite direction. The fine fraction must then be 100% collected from the air stream. In addition, the classifier must not be subject to abrasion, have surfaces on which material can build up to spoil the classification nor subject particles to too violent action which might cause attrition. Above all, the classifier must be inexpensive and economical to operate. It is therefore no wonder that hundreds of classifying devices have been invented over the past 100 years, none of them achieving perfection. Some devices are more successful than others. Since the design of a classifier entails compromises, it is natural that the classifier must be designed around the job it is to perform if maximum efficiency is to be achieved.

3.1 Basic Classifier Details

Classifiers employing gravitational forces only are limited to the coarsest cuts. Their range is normally 10 mesh to 65 mesh, although the range can be extended to 200 mesh. A 200 mesh spherical particle with a specific gravity of 2 has a terminal velocity in standard air of 1 foot per second. The air volume required to effect the classification is proportional to the amount of material to be classified. This air volume must move at 1 foot per second. To classify even relatively small amounts of material necessitates very large, cumbersome equipment. Imparting an inertial force on the particulate material to be classified proportionally increases the drag force required to counteract the inertial force on the cutpoint particle. Air velocities can therefore be increased and the classification equipment required to handle a particular tonnage correspondingly decreases. Classifiers employing inertial force are usually employed for cutpoints from 40 mesh to 270 mesh.

Centrifugal force is employed in classification for the same reasons that inertial forces are employed. Centrifuging is a practical method of imparting a force on a particle 500 to 2,000 times greater than is feasible by the gravitational method. Classifiers employing centrifugal principles have a range of 150 mesh to five microns.

Particle size is normally expressed in mesh or sieve size for particles 40 microns and larger, i.e., the particle that would just pass through an opening formed between the strands of woven wire cloth. For example, a 10 mesh particle is a particle that would barely pass through the spaces formed between wire cloth with 10 openings to the inch. The particle would have a diameter approximately 0.08 inches or 2,000 microns. A 100 mesh particle would barely pass through the spaces between a wire cloth with

100 openings to the inch. The particle would have a diameter of approximately 0.006 inches or 150 microns.

4. Factors Affecting Efficiency

The fractionalization results obtained by air classifying devices on pulverized materials are controlled by the physical characteristics of the material to be classified.

4.1 Cutpoint and Particle Size Distribution

By far, the most important factor is the particle size distribution of the product to be classified with respect to the cutpoint required. A good understanding of this subject matter is essential to grasping the fundamentals of air classification.

First, we must elaborate on the term "cutpoint" briefly described for Step III in Figure 1. At that time, we stated that the cutpoint is established by equilibrium condition of the drag force acting against the gravitational, inertial or centrifugal force which can only hold true for a particular size particle. This is the particle that has a 50-50 chance of being found in the fines or in the coarse. As it will be seen shortly, this is the only acceptable definition of the term; however, it is of no commercial interest. *The user of classifier equipment is only interested in a top size or minimum size value for which there are no commercially-recognized definitions.* A 200 mesh cutpoint might mean anything from a product 100.00% passing through a calibrated mesh sieve to 99%, 98% and 80%, even 70% minus 200 mesh. This also holds true when the user is thinking in terms of coarse fraction devoid of fine material. At that time, a 200 mesh cutpoint would signify a coarse product of 98% plus 200 mesh, etc.

Some materials have very homogeneous particle size distributions. For example, synthetic catalyst for cat crackers where all particles are between 150 and 30 microns with 80% of all particles between 80 and 40 microns. Other products, like crushed limestone, have unlimited extremes with large quantities of coarse particles and very fine minus 10 micron particles.

There are few particles in between. The particle size distribution of the feed is all important in all classifying devices having less than 100% efficiency (none of them does). The less efficient the classifying device, the more effect the feed distribution will have on classifier performance.

Every air classifying device operating at a set stable condition will separate the particles of a mixture into sized fractions according to a probability curve based on the size of the particle. The coarser the particle, the greater the probability of that particle to be found in the coarse fraction and vice versa. For example, a typical MET classifier operated at a 100 micron cutpoint, i.e., all particles exactly 100 microns in diameter in the material feed to the classifier are split evenly between the coarse and fine fraction,

will distribute 200 micron particles twice the cutpoint in the following percentages: 90% in the coarse fraction, 10% in the fines fraction.

At 50 microns (half the cutpoint), the reverse holds true: 10% of the 50 micron particles will be found in the coarse fraction and 90% will be found in the fines fraction. When a heterogeneous material such as limestone is passed through a classifier with the above operating characteristic, the efficiency of the classification is very high as little feed material is found between 200 and 50 microns. With a homogeneous mixture, the efficiency will decrease proportionately to the increase of material between 200 and 50 microns. The above only holds true when efficiency is related to the theoretical cutpoint. From a practical standpoint, classifier efficiency usually is related to the product required by the customer instead of the theoretical cutpoint.

This "actual" efficiency is influenced also by the percentage of the product available in the classifier feed. Example, the following tabulation of "actual" efficiencies for a classifier having the characteristics mentioned above (90% of particles twice the cutpoint are found in the coarse; 90% of particles half the cutpoint are found in the fines) set to produce a fine fraction 98% minus 100 mesh from a heterogeneous mixture 20%, 50% and 80% minus 100 mesh and a homogeneous mixture 20%, 50% and 80% minus 100 mesh would produce the results in Table 1 below.

Table 1

	Heterogeneous Mixture			Homogeneous Mixture		
	20% - 100M	50% - 100M	80% - 100M	20% - 100M	50% - 100M	80% - 100M
Actual Efficiency	37.5%	75%	94%	Not Feasible	2.65%	2.34%
Theoretical Efficiency	96%	90%	90%	Not Feasible	98.0%	82.88%
Theoretical Cutpoint	270 mesh	200 mesh	150 mesh		28 mesh	270 mesh

4.2 Particle Behavior in an Air Stream

A classifier sizes particles according to their settling velocities in the air. The results of a classification test are evaluated; however, against screens which size particles according to the screen's smallest cross-sectional area. The following factors affect particle settling velocities independently of its smallest cross-sectional area.

a. Specific Gravity which affects the particle's mass and, therefore, its settling velocity in air. For example, a 74 micron particle (200 mesh) with a specific gravity of 2 grs/cc will behave in the same manner as a 53 micron particle (270) mesh with a specific gravity of 4 grs/cc.

b. Apparent specific gravity of porous or hollow particles such as diatomaceous earth and flyash will have the same affect on their settling velocities as the actual specific gravity of solid particles.

c. Particle shapes affect the classifier performance when deviating from spherical forms due to their particle changing surface area as the particle tumbles in an air stream producing a variable drag force on it. Particles differing widely from spherical shape are difficult to define size and to measure reliably. For example, a mica flake can have a length and width six times its thickness. If the mean diameter and mass of a particular flake are of a magnitude to have it normally classified as coarse, the particle can still be swept with the fines if the plane in which the flake shows the largest area is perpendicular to the air stream at the moment of its classification.

4.3 Surface Moisture

Free water content of pulverized material when present on the surface of the particles changes the apparent particle size distribution of the classifier feed by forming agglomerates. The free water content tolerated by air classifying devices depends entirely on the nature of the material being classified. Flour, for example, normally contains approximately 18% free water; there is no affect on the classification. However, one percent water in fine limestone will seriously affect the efficiency of the classification.

4.4 Viscosity of Gas Stream

Air classifiers may be operated with heated or refrigerated air or other gases such as nitrogen, having different viscosities from that of standard air. As the drag force acting on particles is directly related to the viscosity of the gas stream, the gravitational, inertial or centrifugal force acting on the particle must be changed proportionally to retain a set cutpoint.

4.5 Electrostatically Charged Particles

These particles will repel each other when they have the same polarity, as is usually the case. The material disperses more readily in an air stream and becomes more difficult to collect by mechanical means. This results in higher classifier cutpoints and lower efficiencies.

4.6 Flow Characteristics

Free flowing materials disperse readily in an air stream and can be distributed evenly without difficulty. Both factors are important prerequisites to good classification. The opposite is true for materials with poor flow characteristics. In addition, materials that have tendencies to build up on classifier surfaces will create flow disturbances or plug the classifier.

4.7 Surface Area

The number of particles per unit volume is an important factor in determining the capacity of any classifying device. The finer the material, the more particles will be held by a given volume unit and the lower the capacity of the classifying device. Due to the heterogeneous mixture of pulverized materials and other technical reasons, particle counts are rarely used and the fineness of a product is expressed in terms of developed surface area, expressed in CM.sq./gr., measured usually by Blaine or Wagner tests. Surface area is sometimes expressed in terms of average particle size. This is an inaccurate method as a slight change in the extremities of the particle size distribution can have a tremendous effect on the surface area developed by a particular sample.

4.8 Particle Hardness

Hard particles besides being abrasive have a tendency to bounce and ricochet inside the classifier chamber when handled at medium to high velocities. This results in abnormal amounts of stray coarse particles in the fine product.

5. Efficiency Formulate

5.1 Actual or Conventional Classifier Efficiency

Actual or conventional classifier efficiency is expressed as the percentage of desired product found in the fines in terms of available product in the classifier feed. For example, 90% efficiency means that 90% of the material considered fines in the classifier feed was classified as fines with the balance, 10%, going into the coarse fraction. As no attention is paid to the particle size distribution of the classifier feed, the formula is valueless when comparing various classifying devices unless they are operated with identical material. The definition of the term "fines" also greatly affects

conventional or actual efficiency as the percentage of coarse material is not taken into consideration in the formula. For example, if the term "fines" is defined as 98% minus 200 mesh, the classifier may have an efficiency of 85% on a particular material. If the standard for the fine product is relaxed and a product 95% minus 200 mesh becomes acceptable, the actual efficiency may become 95% even though the classifier characteristics have not changed. The theoretical cutpoint was raised and more minus 200 mesh material in the classifier feed was found in the desired product. If the standards are increased and the desired product must now be 100% minus 200 mesh, the cutpoint must be decreased, perhaps to 35%.

5.2 Theoretical or Absolute Efficiency

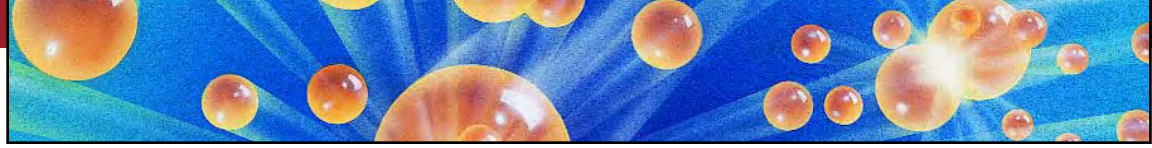
Theoretical or Absolute Efficiency is based on the theoretical cutpoint and is the percentage of material properly classified as coarse and fine. Coarse material is defined as any particle larger than the cutpoint. Since the formula does not take into consideration the particle size distribution of the classifier feed, it is not an effective tool to compare various classifying devices unless operated on identical material. It does, however, eliminate the effects of product requirements on efficiency.

5.3 Fractional Efficiency

Fractional Efficiency, as demonstrated above in the conventional formula, cannot give a satisfactory overall picture of the classification efficiency of a particular classifying device as it is influenced by extraneous factors due to particle size distribution of the material being classified and the selection of the cutpoint. The fractional efficiency method is a piecemeal efficiency. The feed material is divided into several size fractions, usually in the screens selected for the analysis, and in 10 micron increments for the submesh fraction. The percentage of each fraction going into the fine product or coarse product is then calculated. Each percentage thus obtained is actually the efficiency of the classifying device on the corresponding size fractions. Besides being a quantitative measurement, fractional efficiency is also a qualitative measuring device as it shows, as an example, if the 5% plus 200 mesh fraction allowed in a desired fine product is made up of material close to 200 mesh or whether it contains undesirable, very coarse particles.

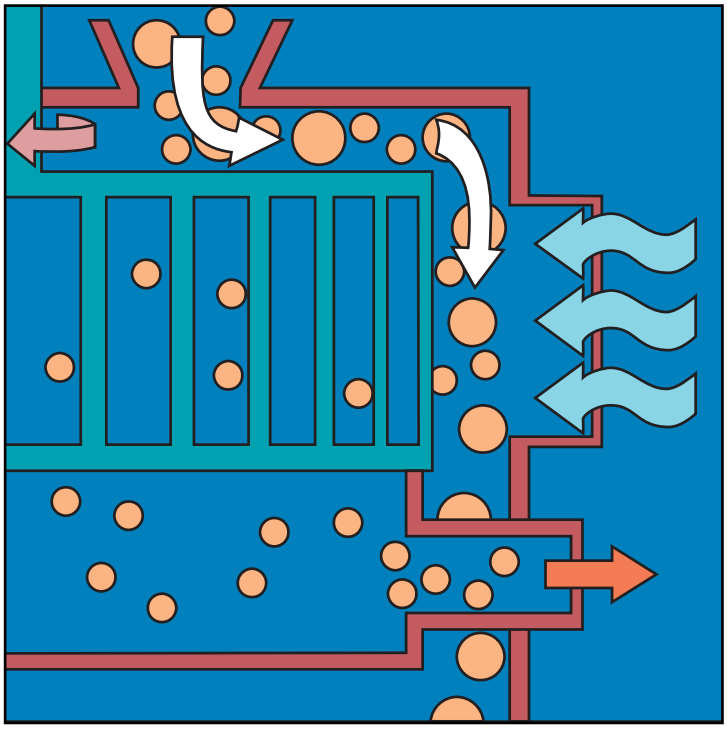
5.4 Fractional Efficiency Curve

Fractional efficiency is best expressed graphically as it summarizes a whole series of percentages, each one of which must be properly identified, into one simple line. The line is plotted with one axis indicating the percent of material available in the feed that was found in either the fine fraction or coarse fraction for each size fraction. The other axis indicates the average particle size in microns or mesh for each size fraction into which the feed was originally divided.



AIR CLASSIFIERS

Whirlwind© SuperFine® and Side Draft™ (SD™)



STURTEVANT Inc.®

POWDER PROCESSING TECHNOLOGY: THE STURTEVANT SOLUTION.

THE SUPERFINE CLASSIFIER

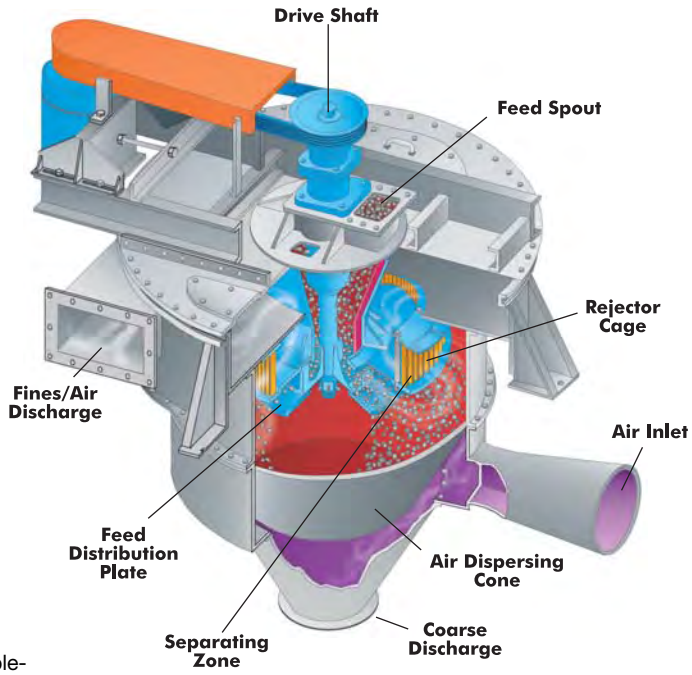
The **SuperFine Classifier** achieves the high degree of accuracy demanded in the separation of particles 44 microns and smaller while delivering benefits including:

- Ideal for separation of high-value materials, 44-5 microns
- Tight particle size control
- Compact design allows easy retrofit into existing facilities
- Consistent, high-quality product, despite variations in feed material, through easy-to-make changes in air flow and variable-speed rejector cage
- Processes abrasive materials; ceramic liners and/or inexpensive, steel replaceable liners available
- Effective product cooling
- Fines collected in cyclone or process collector

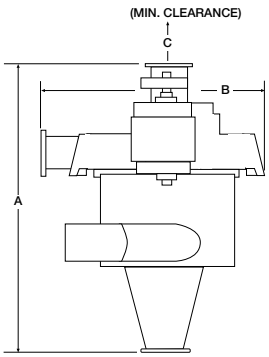
36" SuperFine, fully assembled for shipment

APPLICATIONS

- Ceramics
- Chemicals
- Diatomaceous earth
- Food products
- Minerals
- Plastics
- Shredded fibers
- Tobacco



Material entering through the feed spout is subjected to centrifugal force, causing uniform distribution of the material into the upward-moving air stream. The unique design of the SuperFine's variable-speed, multi-blade rejector cage allows only the selected particles to pass into the fines chamber and exhaust into the system collector. Oversized particles settle into the coarse discharge. The SuperFine system delivers maximum selection efficiency and productivity.



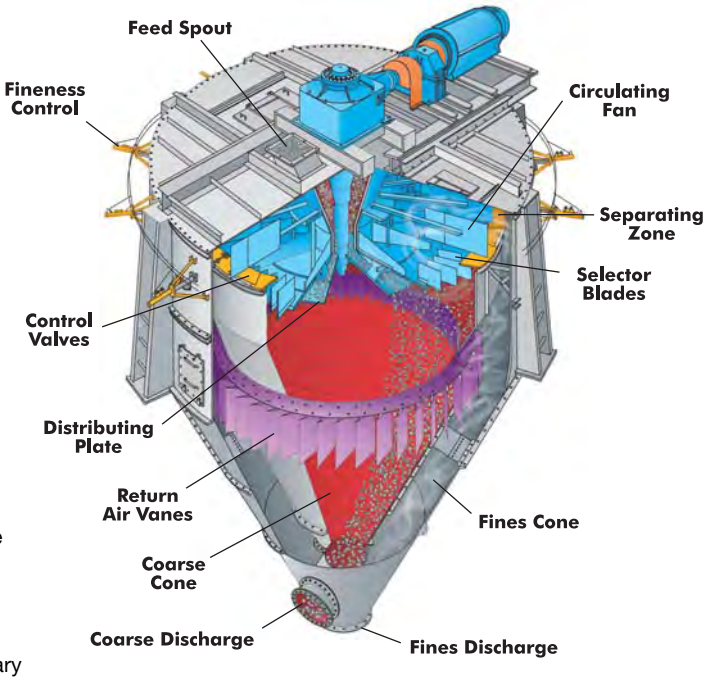
SUPERFINE AIR CLASSIFIERS							
SIZE	A	B	C	WEIGHT (lbs.)	H.P.	AIR FLOW (CFM)	FEED RATE (lbs./hr.)
36"	5' 6"	3' 9"	3' 6"	2,100	10-20	3,000	1,000-10,000
72"	9' 6"	7' 4"	4' 8"	4,800	25-50	9,000	10,000-30,000

THE WHIRLWIND CLASSIFIER

The **Whirlwind Classifier** offers an exceptional ability to achieve a wide range of separations. Its features allow precise definition and delivery of the desired size product while delivering the following benefits:

- Fine classification of 100 to 400 mesh materials
- Lowest capital cost: no auxiliary equipment, such as cyclones, process dust collectors, air locks, and system fans, are needed
- Consistent, high-quality product: external adjustment for variation in feed material
- Saves on operating expenses:
  - Low energy consumption
  - Reduced maintenance; durable, wear-resistant liners
- Processes abrasive materials; long-wearing, ceramic liners and inexpensive, steel replaceable liners

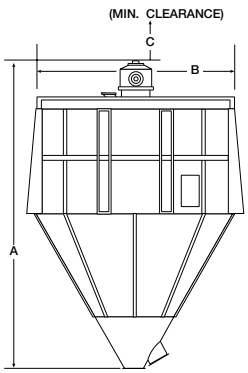
Whirlwind installation requires no process dust collector



APPLICATIONS

- Aggregates, crushed stone
- Cement
- Ceramics
- Chemicals
- Coal
- Diatomaceous earth
- Fly ash
- Food products
- Gypsum
- Hydrated lime
- Minerals
- Plastics
- Silica sand
- Soda ash, bicarbonate

Material entering through the feed spout is subjected to centrifugal force, throwing coarse particles away from the distributing plate and into the air flow. Due to gravity, large particles settle into the coarse cone. Finer particles are swept upward where selector blades generate further classification. During this secondary separation, oversized particles are spun out of the air flow and drop down into the coarse cone. The selected fines continue through the circulating fan and into the fines cone. Fines drop out of the recirculated air flow at the fixed return air vanes.



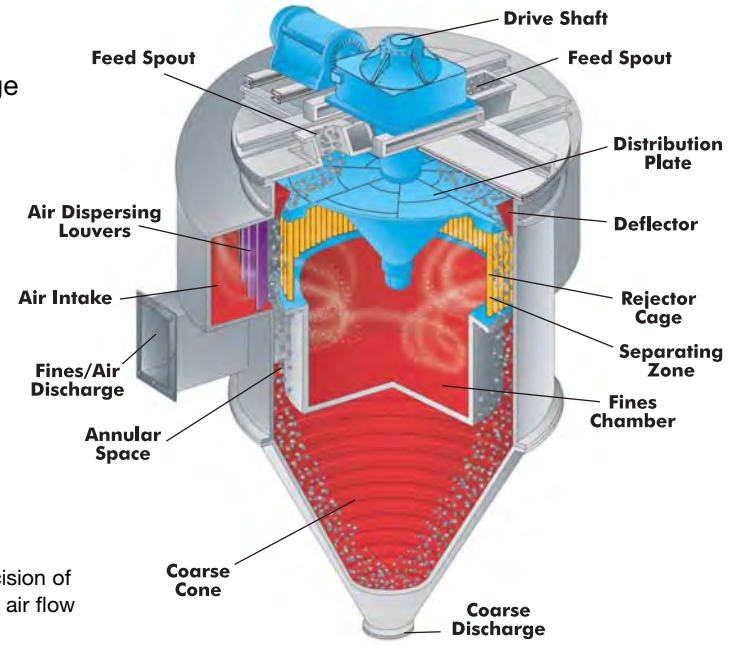
WHIRLWIND AIR CLASSIFIERS							
SIZE	A	B	C	WEIGHT (lbs.)	H.P.	AIR FLOW Vent (CFM)	FEED RATE (tons/hr.)
20"	3' 9"	2' 5"	1' 9"	650	5-7.5	25-50	1
3'	6' 7"	3' 3"	3' 0"	1,500	7.5-10	65-125	3
4.5'	8' 8"	4' 10"	3' 0"	2,400	10-15	75-150	8
6'	10' 9"	6' 4"	3' 8"	6,800	15-25	90-175	14
8'	13' 0"	8' 4"	4' 8"	9,500	20-30	150-300	25
10'	15' 8"	10' 4"	4' 8"	13,000	30-40	190-375	40
12'	19' 1"	12' 4"	5' 6"	18,500	40-50	275-550	56
14'	21' 1"	14' 5"	5' 6"	21,500	50-75	400-800	77
16'	24' 5"	16' 5"	6' 3"	31,000	100-150	675-1,350	125
18'	27' 7"	18' 5"	8' 9"	50,000	250-300	1,000-2,000	200
20'	30' 9"	20' 5"	9' 0"	68,000	350-400	1,500-3,000	300
22'	33' 0"	22' 5"	9' 0"	87,000	450-500	2,000-4,000	450
24'	35' 10"	24'5"	10' 9"	117,000	600-700	2,500-5,000	600
26'	38' 9"	26' 5"	10' 9"	125,000	600-800	3,000-6,000	800

THE SIDE DRAFT CLASSIFIER

Illustrates ceramic lining in fully-assembled SD

The **SD Classifier** represents a highly versatile, energy-efficient system for the consistent separation of particles in the 100 to 400 mesh range.

- Compact design allows easy retrofit into existing facilities
- Saves on operating expenses:
  - Low energy consumption
  - Durable, wear-resistant design minimizes maintenance
- Effective product cooling
- Consistent, high-quality product, regardless of variations in feed material, through easy-to-make changes in air flow and variable-speed rejector cage
- Processes abrasive materials: ceramic liners and/or inexpensive, wear area replaceable liners available
- Fines collected in cyclone or process collector



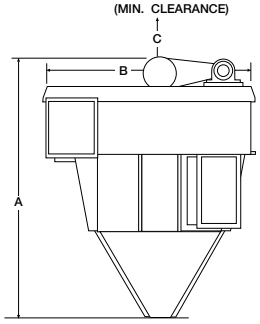
APPLICATIONS

- Aggregates, crushed stone
- Cement
- Ceramics
- Chemicals
- Coal
- Diatomaceous earth
- Fly ash
- Food products
- Gypsum
- Hydrated lime
- Minerals
- Plastics
- Shredded fibers
- Silica sand
- Soda ash, bicarbonate

Material enters through the feed spout, is evenly conveyed across the top of the distribution plate and drops into the separating zone, creating a uniformly dispersed curtain of material. Forces generated by the rejector cage and process air subject the curtain of material to particle size classification.

High separation efficiencies and precision of classification are obtained by controlling air flow and rejector cage speed.

The multi-pin, variable-speed rejector cage allows only the selected fines to pass into the fines chamber and exhaust into the system collector. The coarse particles, after passing through the separating zone, fall into the coarse outlet.



SD AIR CLASSIFIERS							
SIZE	A	B	C	WEIGHT (lbs.)	H.P. (min.-max.)	AIR FLOW (CFM)	FEED RATE (tons/hr:min.-max.)
20	7' 2"	3' 5"	2' 6"	2,100	5-7.5	3,000	4-12
30	13' 3"	5' 2"	3' 4"	2,800	7.5-10	9,400	10-40
40	14' 0"	6' 1"	3' 4"	3,500	20-30	15,300	20-65
50	15' 6"	8' 1"	3' 4"	7,000	30-40	23,500	30-100
60	16' 0"	9' 6"	4' 3"	14,000	40-50	35,300	45-150
70	17' 0"	13' 5"	4' 3"	14,600	50-60	38,000	60-190
80	22' 1"	13' 6"	4' 3"	15,000	60-75	56,000	75-240
90	24' 0"	14' 3"	4' 11"	29,000	75-100	64,000	95-300
100	24' 7"	17' 3"	4' 11"	30,500	100-125	88,300	110-370
110	28' 3"	18' 0"	5' 2"	36,300	125-150	94,200	140-450
120	25' 11"	15' 6"	5' 2"	37,300	150	117,700	160-500
130	31' 2"	19' 3"	5' 2"	45,400	150-200	141,200	190-600
140	34' 0"	21' 10"	8' 4"	62,500	200-250	159,000	220-670
150	29' 7"	20' 10"	8' 4"	63,000	250-300	165,000	250-770
160	31' 8"	23' 1"	9' 11"	87,300	300-400	180,400	280-900
170	35' 2"	23' 6"	9' 11"	109,000	400-500	212,000	320-1,020
180	35' 0"	23' 4"	9' 11"	88,500	500-600	242,000	360-1,150

STURTEVANT: QUALITY FOR GENERATIONS.

For over a century, Sturtevant has been a leader in the powder processing industry. In the 1920s we pioneered much of the air classification technology that is still in use. Today, with more than 3,100 installations and over 70 years of proven performance in separating dry powders into fine and coarse fractions, our experience is unsurpassed.

In response to the variety of applications requiring particle classification through air separation, Sturtevant now offers three separators, providing high-performance equipment that delivers efficiency, accuracy and dependability all over the world in the food, chemical and minerals industries:

- **The Whirlwind**© - Completely self-contained, requires no process dust collection equipment.
- **The SuperFine**® - Ideal for separations at 44-5 microns.
- **The Side Draft**™ **(SD**™**)** - High-efficiency separations. Versatile, variable-speed control to change fineness online.

Each provides unique benefits, backed by maximum performance and Sturtevant durability, to deliver customized solutions for your most exacting needs.

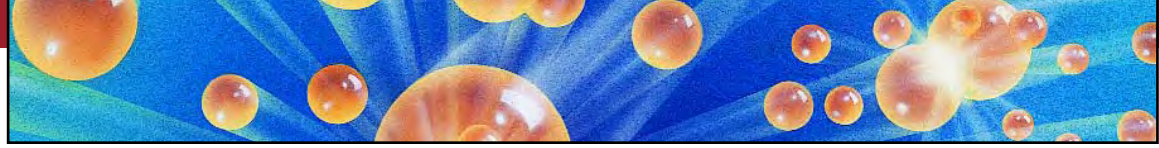
SD fit being checked prior to shipment

16-foot Whirlwind installed in grinding circuit producing 325 mesh product

SUPERIOR PERFORMANCE FROM STURTEVANT.

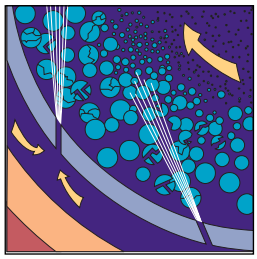
Sturtevant air separators balance the physical principles of centrifugal force, drag force and gravity to generate a high-precision method of classifying particles according to size or density. For dry materials of 100 mesh and smaller, air classification provides the most effective and efficient means for separating a product from a feed stream, for dedusting, or, when used in conjunction with grinding equipment, for increasing productivity. All three Sturtevant air classifiers offer durable construction and other time- and energy-saving advantages, including:

- Capability to process an extensive range of dry materials
- Higher capacity and finer separations than screeners
- Simple construction, low maintenance, easy-to-use controls
- Dial-in, external fineness controls; no system shutdown to change products
- Maximized wear-resistance for abrasive materials in special applications
- Easily modified for water cooling, air cooling or drying of product
- Safe classification for heat-sensitive materials

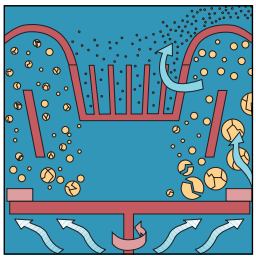


PROVEN PERFORMERS

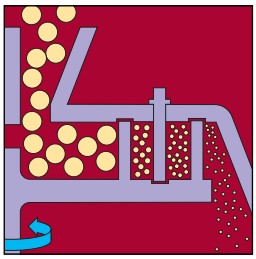
For most dry material size reduction or separation needs,
Sturtevant's extensive line of products can meet your requirements.



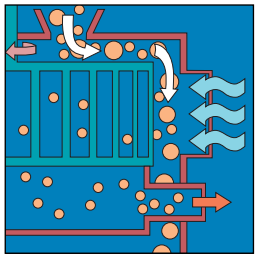
Micronizer®: Jet mills dry particles to sub-micron size; some models USDA-accepted.



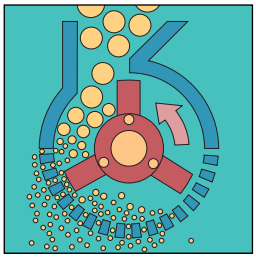
Powderizer®: Air-swept impact mill with integral classifier; grinds to low-micron range with tightest particle size distribution.



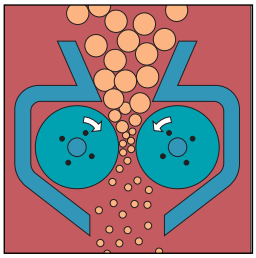
Simpactor®: Centrifugal, pin-type impact mill; reduces low- to medium-density materials to 50-200 mesh.



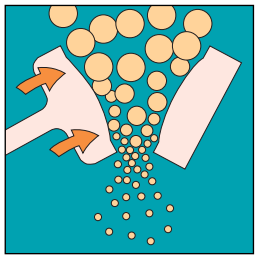
Air Classifiers: Air streams separate fine and coarse particles with mechanical rejector for product quality assurance.



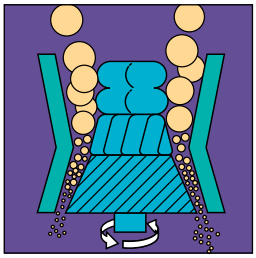
Hammermill: Versatile, perfect for friable materials; easy access for maintenance or inspection.



Roll Crusher: Best-suited for controlled reduction of friable materials; minimal fines.



Jaw Crusher: Ideal for coarse and intermediate crushing; minimal fines production.



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CP-51 / Soil Cleanup Guidance

New York State Department of Environmental Conservation

DEC Policy

Issuing Authority: Alexander B. Grannis, Commissioner

Date Issued: October 21, 2010	**Latest Date Revised:**

I. Summary

This policy provides the framework and procedures for the selection of soil cleanup levels appropriate for each of the remedial programs in the New York State Department of Environmental Conservation (DEC) Division of Environmental Remediation (DER). This policy applies to the Inactive Hazardous Waste Disposal Site Remedial Program, known as the State Superfund Program (SSF); Brownfield Cleanup Program (BCP); Voluntary Cleanup Program (VCP); Environmental Restoration Program (ERP); Spill Response Program - Navigation Law (NL) section 176 (SRP); and the Resource Conservation and Recovery Act (RCRA) Corrective Action Program. It replaces *Technical and Administrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels* (January 24, 1994); the *Petroleum Site Inactivation and Closure Memorandum* (February 23, 1998); and Sections III and IV of *Spill Technology and Remediation Series (STARS) #1* (August 1992).

This document is used in conjunction with the applicable statutes, regulations and guidance. Site-specific soil cleanup levels, determined in accordance with this guidance, are only applied after:

- the site, or area of concern, is fully investigated to determine the nature and extent of contamination;
- all sources of contamination are addressed consistent with the hierarchy provided in 6 NYCRR 375-1.8(c) or consistent with the RCRA Corrective Action Program (as appropriate);
- groundwater, if contaminated, has been evaluated for appropriate remedial actions consistent with 6 NYCRR 375-1.8(d) or consistent with the RCRA Corrective Action Program (as appropriate); and
- impacts on adjacent residential properties, surface water, aquatic ecological resources are evaluated, as well as indoor air, soil vapor, vapor intrusion and other appropriate media.

II. Policy

It is DEC's policy, consistent with applicable statutes and regulations, that all remedies will be protective of public health and the environment. DEC's preference is that remedial programs, including the selection of soil cleanup levels, be designed such that the performance standard results in the implementation of a permanent remedy resulting in no future land use restrictions. However, some of

DEC's remedial programs are predicated on future site use. Further, it is not always feasible to return to a condition where no restrictions are required.

The procedures set forth herein are intended for the use and guidance of both DEC and remedial parties to provide a uniform and consistent process for the determination of soil cleanup levels. This guidance is not intended to create any substantive or procedural rights, enforceable by any party in administrative or judicial litigation with DEC. DEC reserves the right to act at variance with these procedures to address site-specific circumstances and to change the procedures in this guidance at any time.

Please note that this guidance focuses only on soil cleanup levels. All remedies must be fully protective of public health and the environment and must prevent further off-site migration to the extent feasible, with special emphasis on preventing or minimizing migration onto adjacent residential properties. A remedial party is required to evaluate and investigate, if necessary, all environmental media including soil, groundwater, surface water, sediments, soil vapor, ambient air, and biota. [See 6 NYCRR 375-1.8(a)(6) or RCRA Corrective Action Program (as appropriate)]. This investigation will determine if any of the referenced media are, or may be, impacted by site contamination. Applicable guidance should be consulted for media other than soil.

Nothing contained in this guidance, in itself, forms the basis for changes to previously selected remedies. However, a change in the site remedy may be considered consistent with *DER-2: Making Changes to Selected Remedies* (April 1, 2008). [See Section VI, Related References.] To the extent that a change to a selected remedy at a site in one of DER's remedial programs is necessary as provided in DER-2, as applicable, the Soil Cleanup Objectives (SCOs) may be considered in the evaluation of appropriate changes to the selected remedy. For sites in other programs, applicable regulations and guidance must be used.

III. Purpose and Background

DEC has a number of different remedial programs that were developed over time based on separate and distinct authorities. These programs use different procedures to determine the extent of soil cleanup necessary to satisfy the remedial program goals. The purpose of this document is to set forth how soil cleanup levels are selected for the different programs.

Legislation establishing New York State's Brownfield Cleanup Program (Article 27, Title 14 of the Environmental Conservation Law [ECL]) required DEC, in consultation with the New York State Department of Health (NYSDOH), to develop an approach for the remediation of contamination at brownfield sites. The resulting regulation includes seven sets of SCOs. Four sets provide for the protection of public health for different land uses (residential, restricted residential, commercial, and industrial); two sets provide for the protection of other resources (groundwater and ecological resources); and one set includes SCOs for protection of public health and the environment for all uses (unrestricted use).

With the promulgation of the SCOs, it is necessary to discuss how the SCOs, and soil cleanup levels generally, are arrived at for a specific site. Some key definitions in understanding how cleanup levels for soil are arrived at follow.

Feasible, which means suitable to site conditions, capable of being successfully carried out with available technology, implementable and cost effective [see 6 NYCRR 375-1.2(s)].

Presumptive remedy, which means a technology or technique where experience has shown the remedy to be a proven solution for specific types of sites and/or contaminant classes [See *DER-15: Presumptive/Proven Remedial Technologies* February 27, 2007. Refer to Section VI, Related References.]

Soil cleanup level, which means the concentration of a given contaminant for a specific site that must be achieved under a remedial program for soil. Depending on the regulatory program, a soil cleanup level may be based on the regulation [6 NYCRR 375-6.8(a) or (b)], modified from the regulatory value based on site-specific differences, or based on other information, including background levels or feasibility. Soil cleanup levels may include:

- SCOs promulgated at 6 NYCRR 375-6;
- Supplemental Soil Cleanup Objectives (SSCOs);
- a "totals" approach for a family of contaminants known as Polycyclic Aromatic Hydrocarbons (PAHs);
- Presumptive remedy for Polychlorinated Biphenyls (PCBs); and
- Nuisance Condition.

Soil Cleanup Objective (SCO), which means the chemical concentrations for soil cleanup of individual chemicals contained in 6 NYCRR 375-6.8(a) or (b). The SCOs were developed using the process outlined in the Technical Support Document (TSD). The SCOs and the SSCOs defined below are applicable statewide and do not account for many site-specific considerations which could potentially result in higher levels. Soil concentrations that are higher than the SCOs and SSCOs are not necessarily a health or environmental concern. When an SCO (or SSCO) is exceeded, the degree of public health or environmental concern depends on several factors, including the magnitude of the exceedance, the accuracy of the exposure estimates, other sources of exposure to the contaminant, and the strength and quality of the available toxicological information on the contaminant.

Supplemental Soil Cleanup Objective (SSCO), which means a) an existing soil cleanup level for a contaminant which had been included in former TAGM 4046 and was not included in 6 NYCRR 375-6; b) has been developed using the same process used for development of the SCOs; and c) new cleanup levels for soil developed by the remedial party following the approach detailed in Appendix E of the TSD. The TSD provides information relative to the development of cleanup objectives for soil that are not set forth in 6 NYCRR 375-6. Cleanup objectives that have been established at the direction of DEC or the election of remedial parties are included in Table 1.

Technical Support Document (TSD), which refers to the document dated December 2006 detailing the development of the SCOs that were promulgated in 6 NYCRR 375-6. It provides the technical background and provides a detailed discussion of the considerations for development of the SCOs for the different land uses and exposure pathways. The TSD is available on DEC's website [see Section VI, Related References].

The purpose of this guidance is NOT to focus on media other than soil. Accordingly, the remedial program may require remedial activities to address media other than soil (e.g., groundwater, surface

water, sediment, and vapor). Applicable guidance should be consulted for media other than soil. This guidance is to be used in conjunction with the applicable statutes, regulations and guidance. Site-specific soil cleanup levels, determined in accordance with this guidance, are only applied after:

- the site, or area of concern, is fully investigated to determine the nature and extent of contamination;
- all sources of contamination are addressed consistent with the hierarchy provided in 6 NYCRR 375-1.8(c) or consistent with the RCRA Corrective Action Program (as appropriate);
- groundwater, if contaminated, has been evaluated for appropriate remedial actions consistent with 6 NYCRR 375-1.8(d) or consistent with the RCRA Corrective Action Program (as appropriate); and
- an evaluation of impacts on adjacent residential properties, surface water, aquatic ecological resources, as well as indoor air, soil vapor, vapor intrusion and other appropriate media.

IV. Responsibility

The responsibility for maintaining and updating this policy lies with DER. DEC staff are responsible for implementing this policy, with input (as applicable) from NYSDOH.

V. Procedures

A. General Approaches to the Selection of Soil Cleanup Levels

The determination of soil cleanup levels for a site is dependent on:

1. The regulatory program pursuant to which the site is being addressed;
2. Whether the groundwater beneath or down gradient of the site is, or may become contaminated with site-related contaminants;
3. Whether ecological resources constitute an important component of the environment at or adjacent to a site, and which are, or may be, impacted by site-related contaminants; and
4. Other impacted environmental media such as surface water, sediment, and soil vapor.

After fully evaluating the nature and extent of soil contamination associated with a site, the soil cleanup levels will be based on one, or a combination of, the following four approaches.

Approach 1: **Utilize the Unrestricted Use Soil Cleanup Objectives** [see 6 NYCRR Table 375-6.8(a)]. Under this approach, the soil cleanup levels will be established consistent with the SCOs set forth in 6 NYCRR Table 375-6.8(a). For contaminants of concern which are not included in the rule, DEC may direct development of a soil cleanup level which is protective of public health and the environment without restrictions following the procedure outlined in Appendix E of the TSD. Under this approach, the unrestricted SCOs are applied throughout the soil matrix to the top of bedrock (including the saturated zone).

Approach 2: **Utilize the Restricted Use Soil Cleanup Objectives** [see 6 NYCRR Table 375-6.8(b)]. Under this approach, soil cleanup levels will be established consistent with the SCOs set forth in 6 NYCRR Table 375-6.8(b) selecting the lowest SCO in the categories described in A

through C below. Generally, after source removal, the soil cleanup levels do not need to be achieved to more than 15 feet below ground surface or to the top of bedrock, whichever is shallower.

A. Select the applicable land use category for the protection of public health (residential, restricted residential, commercial or industrial);

B. Determine if the SCOs for the protection of groundwater are applicable (see Section V.D); and

C. Determine if the SCOs for the protection of ecological resources are applicable (see Section V.C).

Approach 3: **Limited Site-Specific Modifications to Soil Cleanup Objectives.** This approach allows for consideration of site-specific information to modify the SCOs promulgated in 6 NYCRR Tables 375-6.8 (a) and (b) following the approach detailed in Appendix E of the TSD. The equations and basic methodology specified for calculating the 6 NYCRR 375-6.8 (a) and (b) values may not be modified under this approach. However, in instances where site-specific parameters were used in the calculation of the SCOs, site data different from the assumptions used to calculate the SCOs may be used to modify the soil cleanup levels for a specific site. These instances are very limited and occur only in certain pathways that are listed below.

- Protection of groundwater pathway
- Particulate inhalation pathway
- Volatile inhalation pathway
- Protection of ecological resources pathway

It should be noted that even if site-specific data modifies these pathways, it may not result in modifying the SCOs because the lowest value from all applicable pathways is used to determine each SCO. The inhalation pathway is very seldom the controlling pathway in the determination of the protection of public health. The specific parameters that can be modified are identified in Appendix E of the TSD (e.g., inhalation dispersion terms, fraction of organic carbon in soil, etc.).

The remedial party should consider the cost of collecting the data necessary to support a request to modify the SCOs with the potential for deriving a higher SCO that provides an appropriate level of protection. The remedial party may be required to submit additional data to support the use of modified SCOs. Once DEC approves one or more modified SCOs, they are applied in the manner described under Approach 2.

Approach 4: **Site-Specific Soil Cleanup Objectives.** Under this approach, the remedial party may propose site-specific cleanup levels or approaches for soil which are protective of public health and the environment based on other information. This approach sets forth a flexible framework to develop soil cleanup levels by allowing the remedial party to conduct a more detailed evaluation of site information in an effort to calculate protective soil cleanup levels or approaches unique to a site. Under this approach, the remedial party may propose a remedy that does not include specific soil cleanup levels (e.g., excavate the top 6 feet in an area extending 75 feet in all directions from boring B12); modify the input parameters used in the SCO calculations; use site data to improve or confirm predictions of exposures to receptors to contaminants of concern; analyze site-specific risks using

risk assessments; use toxicological information available from alternate sources; or consider site background and historic fill. Data supporting these site-specific adjustments or use of alternate methodologies must also be provided to DEC for review and approval to ensure that the resulting soil cleanup levels are protective.

The Approach 4 framework leaves DEC with discretion to determine whether a different approach is appropriate for the site and, if a different approach is to be used, the proper method of implementation. The remedial party should consider the cost of collecting the data necessary to develop site-specific soil cleanup levels (or approaches) with the potential for deriving a soil cleanup level which is higher than a particular SCO and which provides an appropriate level of protection. The remedial party may also be required to submit additional data to support the use of methodologies in the calculation of site-specific soil cleanup levels or to support the proposed approach.

B. Application of Soil Cleanup Levels for the Specific Remedial Programs: Soil cleanup levels are determined on a site-specific basis depending on the program under which the site is being remediated. In some cases (e.g., BCP Track 1 or Track 2), the soil cleanup levels are the SCOs taken directly from 6 NYCRR 375-6. In other cases, soil cleanup levels may be derived from the Part 375 SCOs but modified based on other information. In yet other cases, the soil cleanup levels may have no relationship or connection to the SCOs, but rather be developed in accordance with DEC-approved methodologies or approaches.

1. <u>Inactive Hazardous Waste Disposal Site Remedial Program (State Superfund Program)</u>: The goal of the remedial program for a specific site is to restore that site to pre-disposal conditions, to the extent feasible. The unrestricted use SCOs are considered to be representative of pre-disposal conditions unless an impact to ecological resources has been identified (see 6 NYCRR 375-2.8(b)(2)). However, it must be recognized that achievement of this goal may not be feasible in every case. At a minimum, all remedies must be protective of public health and the environment. The following procedure is used to determine the most feasible remedy.

(a) The remedial party shall evaluate, and if feasible, implement a cleanup utilizing Approach 1 (application of unrestricted SCOs).

(b) Where DEC determines that achieving unrestricted SCOs is not feasible as documented in a feasibility study, the remedial party may evaluate alternatives to remediate the site to the greatest extent feasible (see *DER-10: Technical Guidance for Site Investigation and Remediation*, Chapter 4.3). [See Section VI, Related References.] In this event, the remedial party may propose soil cleanup levels in accordance with any of the general approaches. However, when considering restricted use soil cleanup levels, the remedial party should apply the least restrictive use category feasible. For purposes of this discussion, residential use is the least restrictive use and industrial use is the most restrictive category. This process starts with consideration of residential use, followed by restricted residential use, commercial use, and then industrial use. The evaluation proceeds through the different land uses until a feasible remedy is found. This evaluation is not bound to the SCOs in regulation or SSCOs set forth in this guidance but may result in a site-specific soil cleanup level that is between the SCOs or soil cleanup level for two different land uses (e.g., above the restricted residential SCO and below the commercial SCO).

2. <u>Brownfield Cleanup Program</u> The remedy shall be fully protective of public health and the environment, including, but not limited to, groundwater according to its classification pursuant to ECL 17-0301, drinking water, surface water, air (including indoor air), sensitive populations (including children), and ecological resources (including fish and wildlife). Soil cleanup levels corresponding to the cleanup track under which the site is being remediated are required to be met. The four cleanup tracks are:

<u>Track 1</u>: Cleanups pursuant to this track must achieve unrestricted use of the site. This track requires that the remedial party implement a cleanup utilizing Approach 1. Institutional and engineering controls are allowed only for periods of less than five years (defined as short-term controls) except in the limited instance where a volunteer has conducted remedial activities resulting in a bulk reduction in groundwater contamination to asymptotic levels.

<u>Track 2</u> : Cleanups pursuant to this track may consider the current, intended, or reasonably anticipated future use in determining the appropriate cleanup levels for soil. This track requires that the remedial party implement a cleanup that achieves the SCOs in the tables in 6 NYCRR 375-6.7(b) for the top 15 feet of soil (or bedrock if less than 15 feet). This track follows approach 2. Institutional and engineering controls are allowed for soil (for the top 15 feet of soil or bedrock if less than 15 feet) for less than five years (defined as short-term controls). Institutional and engineering controls which limit site use and the use of onsite groundwater can be used without regard to duration. Track 2 cleanups at restricted residential, commercial or industrial use sites require site management plans to ensure that material removed from the site (post remedial action) is managed appropriately and to ensure that any buffer zone protecting adjacent residential use sites or ecological resources is maintained.

<u>Track 3</u>: Cleanups pursuant to this track may consider the current, intended, or reasonably anticipated use in determining the appropriate cleanup levels for soil. This track requires that the remedial party implement a cleanup utilizing Approach 3 for those SCOs which the remedial party seeks to modify an established SCO. Institutional and engineering controls are allowed for soil (for the top 15 feet of soil or bedrock if less than 15 feet) for less than 5 years (defined as short-term controls). Institutional and engineering controls which limit site use and the use of on-site groundwater can be used without regard to duration. Track 3 cleanups at restricted residential, commercial or industrial use sites require site management plans to ensure that material removed from the site (post remedial action)is managed appropriately and to ensure that any buffer zone protecting adjacent residential use sites or ecological resources is maintained.

<u>Track 4</u>: Cleanups pursuant to this track may consider the current, intended, or reasonably anticipated use in determining the appropriate cleanup levels for soil. This track allows for the development of site-specific soil cleanup levels below the cover system in accordance with Approach 4. Track 4 remedies must address all sources as a component of the remedy. Short- and long-term institutional and engineering controls are allowed to achieve protection of public health and the environment. The remedy under Track 4 must provide a cover system over exposed residual soil contamination. Soils which are not otherwise covered by structures such as buildings, sidewalks or pavement (i.e., exposed surface soils) must be covered with soil that complies with the use-based SCOs in 6 NYCRR Table 375-6.8(b) levels for the top one foot (non-residential uses) or top two feet (restricted residential use).

3. Environmental Restoration Program: The goal of the program for a specific site is to select a remedy that is protective of public health and the environment, including, but not limited to, groundwater according to its classification pursuant to ECL 17-0301, drinking water, surface water and air (including indoor air), sensitive populations (including children) and ecological resources (including fish and wildlife). At a minimum, the remedy selected shall eliminate or mitigate all significant threats to public health and to the environment presented by contaminants disposed at the site through the proper application of scientific and engineering principles. Soil cleanup levels may be developed in accordance with Approaches 1 – 4 without restriction.

4. Voluntary Cleanup Program: The goal of the program for a specific site is to select a remedy that is protective of public health and the environment for the contemplated use. The soil cleanup levels may be developed in accordance with Approaches 1 – 4 without restriction.

5. Petroleum Spill Response Program: The goal of the Petroleum Spill Response Program is to achieve pre-spill conditions [6 NYCRR 611.6(a)(4)]. Remedial activities under this program shall be undertaken relative to the petroleum contamination that was released along with any co-mingled contamination from other sources. The remedial party shall achieve, to the extent feasible, the unrestricted SCOs for petroleum-related contaminants listed in 6 NYCRR Table 375-6.8(a). For petroleum contaminants not included in 6 NYCRR Table 375-6.8(a) (discussed in Section E below), the remedial party shall apply, to the extent feasible, the soil cleanup levels provided in Table 1. For ease of implementation, two lists of petroleum contaminants (Gasoline and Fuel Oil, Tables 2 and 3) are attached. The tables combine the applicable petroleum-related SCOs from 6 NYCRR 375-6.8(a) and the applicable petroleum related SSCOs from Table 1. Where DEC determines that it is not feasible to achieve the soil cleanup levels as set forth in this paragraph, the remedial party may propose soil cleanup levels in accordance with any of the general approaches. However, when considering restricted use soil cleanup levels, the remedial party should apply the least restrictive use category feasible.

For purposes of this discussion, residential use is the least restrictive use, and industrial use is the most restrictive category. This process starts with consideration of residential use, followed by restricted residential use, commercial use, and then industrial use. The evaluation proceeds through the different land uses until a feasible remedy is found. If the protection of groundwater or ecological SCOs apply, the lower of the applicable protection of the public health SCO or the applicable protection of groundwater or ecological SCO should be achieved to the extent feasible. This evaluation is not bound to the SCOs in regulation or the SSCOs set forth in this guidance but may result in a site-specific soil cleanup level that is between the SCOs or soil cleanup level for two different land uses (e.g., above the restricted residential SCO and below the commercial SCO).

6. RCRA Corrective Action Program: The RCRA program was promulgated to regulate facilities that actively manage hazardous waste. DER administers the RCRA Corrective Action Program, with a goal of achieving soil cleanup levels at Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) that eliminate risks to public health and the environment (i.e., clean the site to unrestricted use) or control said risks (i.e., clean the site or unit(s) to the lowest possible soil cleanup objective, regardless of site use), to the extent feasible. This goal takes into account that certain units at the facility may be permitted to manage hazardous waste under New York State's Hazardous Waste Management (HWM) regulations (6 NYCRR Part 373). The requirements of active HWM facilities, as well as the site's history, will be considered when soil cleanup levels are determined. Selected remedies must be protective of public health and the environment. Soil cleanup levels will be selected using the following procedure.

(a) The remedial party shall evaluate, and if feasible, implement a cleanup utilizing Approach 1. Under this approach, the unrestricted SCOs apply to the entire soil matrix to the top of bedrock. For contaminants not listed in 6 NYCRR 375-6, a new or existing SSCO may be used.

(b) If DEC determines that achieving unrestricted SCOs is not feasible, the remedial party may evaluate other alternatives to remediate the site. In this event, the remedial party may propose soil cleanup levels in accordance with any of the general approaches. However, when considering restricted use soil cleanup levels, the remedial party shall apply the use category which is both feasible and least restricted. For purposes of this discussion, residential use is the least restricted category and industrial use is the most restricted category. A soil cleanup level between two different land uses (e.g., residential and restricted residential) may be determined to be feasible, and if selected, must be achieved.

Any soil cleanup levels specified in regulation (i.e., 6 NYCRR 373-2.6(b)-(k) for "regulated units" as defined in 6 NYCRR 373-2.6 (a)(1)(ii)) or in a DEC enforceable document (Part 373 permits, Consent Orders, etc.) shall take precedence over the soil cleanup levels which could be established through use of this document.

C. Determination of Whether Ecological Resources SCOs Apply to a Site: SCOs developed to protect ecological resources (ESCOs) are incorporated in the Unrestricted Use SCO in 6 NYCRR Table 375-6.8(a) and are included as a separate category in 6 NYCRR Table 375-6.8(b). For contaminants of concern which do not have a calculated ESCO in regulation, DEC may direct the remedial party to develop a soil cleanup level which is protective of ecological resources where appropriate, based on the process outlined in Appendix E of the TSD.

The presence of ecological resources and any impact to those resources will be assessed during the remedial investigation. For sites where there is the potential for an ecological resource impact to be present, or where it is likely to be present, an assessment of fish and wildlife resource impacts will be performed. For sites in DER's SSF, BCP, VCP and ERP, the assessment will be performed in accordance with DEC's guidance, *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites*, October, 1994, as described in DER-10, Section 3.10. For sites in the RCRA Corrective Action Program, the assessment will be performed using the above referenced fish and wildlife impact analysis document as guidance, and by consulting with appropriate personnel in DEC's Division of Fish, Wildlife and Marine Resources.

Soil cleanup levels which are protective of ecological resources must be considered and applied, as appropriate, for the upland soils (not sediment) at sites where DEC determines, based on the foregoing analysis, that:

- ecological resources are present, or will be present, under the reasonably anticipated future use of the site, and such resources constitute an important component of the environment at, or adjacent to, the site;

- an impact or threat of impact to the ecological resource has been identified; and

- contaminant concentrations in soil exceed the ESCOs as set forth in 6 NYCRR 375-6.8(b) or the Protection of Ecological Resources SSCOs contained in this document.

Sites or portions thereof that will be covered by buildings, structures or pavement are not subject to the ESCOs. Further, ecological resources do not include pets, livestock, agricultural or horticultural crops, or landscaping in developed areas. (See 6 NYCRR 375-6.6 for more detail.)

D. Determination of Whether Protection of Groundwater SCOs Apply: SCOs developed to protect groundwater are incorporated in the Unrestricted Use SCOs in 6 NYCRR Table 375-6.8(a) and are included as a separate category in 6 NYCRR Table 375-6.8(b). For contaminants of concern which do not have a protection of groundwater SCO, DEC may direct the remedial party to develop a soil cleanup level which is protective of groundwater using the process in Appendix E of the TSD.

1. Except as provided for in (2) below, the protection of groundwater SCOs will be applicable where:

   (i) contamination has been identified in on-site soil by the remedial investigation; and
   (ii) groundwater standards are, or are threatened to be, contravened by the presence of soil contamination at concentrations above the protection of groundwater SCOs.

2. DEC may provide an exception to the applicability of the protection of groundwater SCOs, as set forth in 6 NYCRR 375-6.5(a)(1), when (i), (ii), and (iii) exist and either (iv) or (v) also apply, as described below.

   (i) The groundwater standard contravention is the result of an on-site source which is addressed by the remedial program.
   (ii) An environmental easement or other institutional control will be put in place which provides for a groundwater use restriction.
   (iii) DEC determines that contaminated groundwater at the site:
      (a) is not migrating, nor is likely to migrate, off-site; or
      (b) is migrating, or is likely to migrate, off-site; however, the remedy includes active groundwater management to address off-site migration.
   (iv) DEC determines the groundwater quality will improve over time.
   (v) The groundwater contamination migrating from the site is the result of an off-site source of contamination, and site contaminants are not contributing consequential amounts to the groundwater contamination.

3. In determining whether to provide the exemption set forth in subparagraph 2 above, DEC will consider:

   (i) all of the remedy selection criteria at 6 NYCRR 375-1.8(h) or in the RCRA Corrective Action program;
   (ii) the amount of time that the groundwater will need to be actively managed for the protection of public health and the environment; and
   (iii) the potential impact that groundwater contamination may have on media not specifically addressed by the SCOs (e.g., vapor intrusion, protection of surface water, and protection of aquatic ecological resources).

E. Supplemental Soil Cleanup Objectives: SSCOs are either existing cleanup levels in Table 1 or are new soil cleanup levels developed by the remedial party as part of its remedial program. These SSCOs are in addition to the SCOs that are included in Part 375.

Existing SSCOs: The Table 1 list of SSCOs includes contaminants from former TAGM 4046 that were not included in 6 NYCRR 375-6.8 and soil cleanup levels developed using the process detailed in Appendix E of the TSD but not promulgated. For those contaminants which were part of the former TAGM 4046, soil cleanup levels exist for the protection of public health (based on ingestion) and for the protection of groundwater. In some cases, to be determined on a site-by-site basis, evaluation of other factors is likely needed for the protection of public health, especially when the use of a site includes residential use.

These other factors include other exposure pathways (e.g., homegrown vegetable ingestion, inhalation and dermal contact), potential non-site exposures to the contaminant and current toxicological data on the contaminant. In these instances, DEC (in consultation with NYSDOH) will determine if the additional factors have been adequately addressed. The SSCOs identified in Table 1 (subject to the limitation described above) may be used as if they were included in Part 375. A remedial party is not required to use the SSCOs set forth in Table 1. In lieu of applying an SSCO, the remedial party may elect to develop a soil cleanup level (using the process described in Appendix E of the TSD and discussed below.) Table 1 also includes SSCOs that were developed for some pathways using the same process detailed in the TSD. A remedial party may elect to use those SSCOs directly or confirm that the calculated value for that pathway is correct.

New SSCOs: The remedial party may elect to, or DEC may direct a remedial party to, develop a contaminant-specific SCO for any contaminant not included in 6 NYCRR Tables 375-6.8(a) or (b). Generally, DEC will request that an SCO be developed only where the contaminant is a predominant contaminant of concern (COC) at the site and is not otherwise being addressed to DEC's satisfaction as part of the proposed remedy. This could happen, for example, when a remedial party is seeking a Track 1 cleanup and non-SCO/SSCO contaminants are present and may not be satisfactorily addressed by the remedial activities addressing the SCOs or SSCOs. Guidance on the process for developing new SCOs is provided in Appendix E of the TSD. DEC will include all newly developed soil cleanup levels, developed and approved pursuant to this paragraph in a revised Table 1. The developed SSCO must:

1. be developed utilizing the same methodologies that were used by DEC to develop SCOs that are set forth in Part 375; and

2. apply the maximum acceptable soil concentrations (caps), as set forth in section 9.3 of the TSD.

F. Use of SCOs and SSCOs as a Screening Tool: The SCOs and SSCOs may be used to identify areas of soil contamination and to determine the extent of soil contamination. As noted in Section V.K, consideration of other media is required to determine if remedial action is needed.

1. At sites or areas of concern where contaminant concentrations are equal to or below the unrestricted SCOs in 6 NYCRR Table 375-6.8(a), no action or study is warranted because of soil contamination.

2. The exceedance of one or more applicable SCOs or SSCOs, (which is the lower of protection of public health, protection of groundwater, or protection of ecological resources soil cleanup objectives as described in Section III below), alone does not trigger the need for remedial action, define "unacceptable" levels of contaminants in soil, or indicates that a site qualifies for any DEC remedial program (e.g., BCP, SSF). As noted in the definition of SCO above, SCOs and SSCOs are applicable statewide and do not account for many site-specific considerations which could potentially result in higher levels. Therefore, soil concentrations that are higher than the applicable SCOs or SSCOs are not necessarily health or environmental concerns.

3. When an applicable SCO or SSCO is exceeded, the degree of public health or environmental concern depends on several factors, including:

    - magnitude of the exceedance;
    - accuracy of the exposure estimates;
    - other sources of exposure to the contaminant; and
    - strength and quality of the available toxicological information on the contaminant.

G. Soil Cleanup Levels for Nuisance Conditions: Experience has shown that contaminants in soil that meets the DEC-approved soil cleanup levels can exhibit a distinct odor or other type of nuisance (e.g., staining). This is true even though the contaminants will not leach from the soil (e.g., certain soils with more insoluble substances at higher concentrations). When DEC determines that soil remaining after the remedial action will result in the continuation of a nuisance (e.g., odors, staining, etc), DEC will require that additional remedial measures be evaluated, and may require additional remedial actions be taken to address the nuisance condition.

H. Subsurface Soil Cleanup for Total Polycyclic Aromatic Hydrocarbons: For non-residential use sites (i.e., commercial or industrial use sites) where the ESCOs are not applicable, DEC may approve a remedial program which achieves a soil cleanup level of 500 parts per million (ppm) for total PAHs for all subsurface soil. The 500 ppm soil cleanup level is in lieu of achieving all of the PAH-specific SCOs in 6 NYCRR 375-6. For purposes of this provision, subsurface soil shall mean the soil beneath permanent structures, pavement, or similar cover systems; or at least one foot of soil cover (which must meet the applicable SCOs). Institutional controls (e.g., an environmental easement) along with a site management plan will be required when this soil cleanup level is employed at a site. This cleanup level is determined to be feasible and protective based on DEC's experience in its various remedial programs. This approach has existed in TAGM 4046 since it was first issued in 1992.

I. Soil Cleanup for PCBs: DEC may approve a remedial program which achieves a soil cleanup level for PCBs as set forth herein:

1. **For Non-BCP sites:** An acceptable presumptive remedy for soil where neither the unrestricted SCOs nor the ESCOs are applied in the remedial program may include a soil cleanup level for PCBs of 1 ppm in the surface soils and 10 ppm in subsurface soils.

2. **For BCP sites:** An acceptable presumptive remedy for soil may include a soil cleanup level for PCBs of 1 ppm (the applicable SCO) in the surface soils and 10 ppm in subsurface in limited circumstances as follows:

- cleanup track is Track 4;
- site use will be restricted residential, commercial or industrial; and
- ESCOs do not apply.

3. **At industrial use sites,** a level of 25 ppm for PCBs provided that access is limited and individual occupancy is restricted to less than an average of 6.7 hours per week.

For purposes of this provision, subsurface soil shall mean:

- soil beneath permanent structures, pavement, or similar cover systems;
- soil beneath 1 foot of soil cover for commercial and industrial uses; or
- soil beneath 2 feet of soil cover for residential and restricted residential uses.

Institutional controls (i.e., an environmental easement), along with a site management plan, will be required when this soil cleanup level is employed at a site. As with all presumptive remedies, just because a remedy is presumptive does not mean that it will work at every site. For example, this presumptive remedy for PCBs in soil is not applicable at most landfills. This cleanup level is determined to be feasible and protective based on DEC's experience in its various remedial programs. Further, this approach has existed in TAGM 4046 since it was first issued in 1992.

J. Sampling and Compliance with Soil Cleanup Levels: The number of samples to determine if the SCOs have been achieved should be sufficient to be representative of the area being sampled. See attached Table 4 for suggested sampling frequency and subdivision 5.4(e) of DER-10 for details. This frequency can be used for confirmatory samples or for backfill. It is DEC's goal that all confirmatory samples demonstrate that the remedy has achieved the DEC-approved soil cleanup levels. However, recognizing the heterogeneity of contaminated sites and the uncertainty of sampling and analysis, DEC project manager has limited discretion to determine that remediation is complete where some discrete samples do not meet the soil cleanup levels established for a site. See DER-10 for more information regarding the determination that remediation is complete.

K. Other Considerations: All remedies must be fully protective of public health and the environment and prevent off-site migration to the extent feasible with special emphasis for the prevention or minimization of migration onto adjacent residential properties or into ecological resources. A remedial party is required to investigate all environmental media including soil, groundwater, surface water, sediments, soil vapor, indoor air, and biota. (See 6 NYCRR 375-1.8(a)(6) or RCRA Corrective Action Program). This investigation will determine if any of the referenced media are, or may be, impacted by site contamination. However, the SCOs do not directly address these other media. DEC may require remedial actions to address such media and impacts, including but not limited to the application of lower soil cleanup levels or buffer zones where it determines, based on the investigation, that any of these media are, or may be, impacted by site contamination.

VI. Related References:

- Environmental Conservation Law, Article 27 Titles 3, 5, 9, 13 and 14.

- Article 12 of the Navigation Law, Section 178.

- 6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.
- 6 NYCRR Subparts 373-1, 373-2 and 373-3, Requirements for Hazardous Waste Management Facilities. September 6, 2006.
- 6 NYCRR Part 611, Environmental Priorities and Procedures in Petroleum Cleanup and Removal. November 5, 1984 (amended).
- Development of Soil Cleanup Objectives: Technical Support Document. New York State Department of Environmental Conservation. December 14, 2006.
- Supplemental Guidance to RAGS: Calculating the Concentration Term. United States Environmental Protection Agency. Publication 9285.7-081. May 1992.
- New York State Guidelines for Urban Erosion and Sediment Control. 1997.
- Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites. New York State Department of Environmental Conservation. October 1994.
- Program Policy DER-2, *Making Changes to Selected Remedies*. New York State Department of Environmental Conservation. April 1, 2008.
- Program Policy DER-10, *Technical Guidance for Site Investigation and Remediation*. New York State Department of Environmental Conservation. May 3, 2010.
- Program Policy DER-15, *Presumptive/Proven Remedial Technologies*. New York State Department of Environmental Conservation. February 27, 2007.

TABLES

1 - Supplemental Soil Cleanup Objectives
2 - Soil Cleanup Levels for Gasoline Contaminated Soils
3 - Soil Cleanup Levels for Fuel Oil Contaminated Soils
4 - Recommended Number of Soil Samples for Soil Imported to or Exported From a Site

Table 1

Supplemental Soil Cleanup Objectives
(ppm)

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
METALS							
Aluminum	7429-90-5					10,000 [a,b]	
Antimony	7440–36-0					12[c]	
Boron	7440-42-8					0.5	
Calcium	7440-70-2					10,000 [a,b]	
Cobalt	7440-48-4	30				20	
Iron	7439-89-6	2,000					
Lithium	7439-93-2					2	
Molybdenum	7439-98-7					2	
Technetium	7440-26-8					0.2	
Thallium	7440-28-0					5 [c]	
Tin	7440-31-5					50	
Uranium	7440-61-1					5	
Vanadium	7440-62-2	100 [a]				39[b]	
PESTICIDES							
Biphenyl	92-52-4					60	
Chlordecone (Kepone)	143-50-0					0.06	
Dibenzofuran	132-64-9						6.2
2,4-D (2,4-Dichloro-phenoxyacetic acid)	94-75-7	100 [a]					0.5
Furan	110-00-9					600	
Gamma Chlordane	5103-74-2	0.54					14
Heptachlor Epoxide	1024-57-3	0.077					0.02
Methoxychlor	72-43-5	100 [a]				1.2	900

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
Parathion	56-38-2	100 [a]					1.2
2,4,5-T	93-76-5	100 [a]					1.9
2,3,7,8-TCDD	1746-01-6					0.000001	
2,3,7,8-TCDF	51207-31-9					0.000001	
SEMIVOLATILE ORGANIC COMPOUNDS							
Aniline	62-53-3	48	100[a]	500[a]	1000[a]		0.33[b]
Bis(2-ethylhexyl) phthalate	117-81-7	50				239	435
Benzoic Acid	65-85-0	100[a]					2.7
Butylbenzyl-phthalate	85-68-7	100 [a]					122
4-Chloroaniline	106-47-8	100 [a]					0.22
Chloroethane	75-00-3						1.9
2-Chlorophenol	95-57-8	100 [a]				0.8	
3-Chloroaniline	108-42-9					20	
3-Chlorophenol	108-43-0					7	
Di-n-butyl-phthalate	84-74-2	100 [a]				0.014	8.1
2,4-Dichlorophenol	120-83-2	100 [a]				20	0.40
3,4-Dichlorophenol	95-77-2					20	
Diethylphthalate	84-66-2	100 [a]				100	7.1
Di-*n*-hexyl-phthalate	84-75-3					0.91	
2,4-Dinitrophenol	51-28-5	100 [a]				20	0.2
Dimethylphthlate	131-11-3	100 [a]				200	27
Di-n-octylphthlate	117-84-0	100 [a]					120
1,2,3,6,7,8-HCDF	57117-44-9					0.00021	
Hexachloro-benzene	118-74-1	0.41					1.4
2,6-Dinitrotoluene	606-20-2	1.03					1.0
Isophorone	78-59-1	100 [a]					4.4

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
4-methyl-2-pentanone	108-10-1						1.0
2-methyl-naphthalene	91-57-6	0.41					36.4
2-Nitroaniline	88-74-4						0.4
3-Nitroaniline	99-09-2						0.5
Nitrobenzene	98-95-3	3.7	15	69	140	40	0.17[b]
2-Nitrophenol	88-75-5					7	0.3
4-Nitrophenol	100-02-7					7	0.1
Pentachloroaniline	527-20-8					100	
2,3,5,6-Tetrachloroaniline	3481-20-7					20	
2,3,4,5-Tetrachlorophenol	4901-51-3					20	
2,4,5-Trichloroaniline	636-30-6					20	
2,4,5-Trichlorophenol	95-95-4	100 [a]				4	0.1
2,4,6-Trichlorophenol	88-06-2					10	
VOLATILE ORGANIC COMPOUNDS							
2-Butanone	78-93-3	100 [a]					0.3
Carbon Disulfide	75-15-0	100 [a]					2.7
Chloroacetamide	79-07-2					2	
Dibromochloro-methane	124-48-1					10	
2,4-Dichloro aniline	554-00-7					100	
3,4-Dichloroaniline	95-76-1					20	
1,2-Dichloropropane	78-87-5					700	
1,3-Dichloropropane	142-28-9						0.3
2,6-Dinitrotoluene	606-20-2	1.03					0.17[b]
Ethylacetate	141-78-6					48	

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
4-methyl-2-pentanone	108-10-1						1.0
113 Freon (1,1,2- TFE)	76-13-1	100 [a]					6
isopropylbenzene	98-82-8	100 [a]					2.3
p-isopropyltoluene	99-87-6						10
Hexachlorocyclo-pentadiene	77-47-4					10	
Methanol	67-56-1					6.5	
N-nitrosodiphenyl-amine	86-30-6					20	
Pentachloro-benzene	608-93-5					20	
Pentachloronitro-benzene	82-68-8					10	
Styrene	100-42-5					300	
1,2,3,4-Tetrachlorobenzene	634-66-2					10	
1,1,2,2-Tetrachloroethane	79-34-5	35					0.6
1,1,2,2-Tetrachloroethylene	127-18-4					2	
1,2,3-Trichlorobenzene	87-61-6					20	
1,2,4-Trichlorobenzene	120-82-1					20	3.4
1,2,3-Trichloropropane	96-18-4	80					0.34

[a] SCOs for organic contaminants (volatile organic compounds, semivolatile organic compounds, and pesticides) are capped at 100 ppm for residential use, 500 ppm for commercial use, 1000 ppm for industrial use. SCOs for metals are capped at 10,000 ppm.

[b] Based on rural background study

[c] SCO limited by contract required quantitation limit.

Table 2

Soil Cleanup Levels for Gasoline Contaminated Soils

Contaminant	CAS Registry Number	Soil Cleanup Level (ppm)
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12.0
sec-Butylbenzene	135-98-8	11.0
Ethylbenzene	100-41-4	1.0
Isopropylbenzene	98-82-8	2.3
p-Isopropyltoluene	99-87-6	10.0
Methyl-Tert-Butyl-Ether	1634-04-4	0.93
Naphthalene	91-20-3	12.0
n-Propylbenzene	103-65-1	3.9
Tert-Butylbenzene	98-06-6	5.9
Toluene	108-88-3	0.7
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Xylene (Mixed)	1330-20-7	0.26

Table 3

Soil Cleanup Levels for Fuel Oil Contaminated Soil

Contaminant	CAS Registry Number	Soil Cleanup Level (ppm)
Acenaphthene	83-32-9	20
Acenaphthylene	208-96-8	100
Anthracene	120-12-7	100
Benz(a)Anthracene	56-55-3	1.0
Dibenzo(a,h)Anthracene	53-70-3	0.33
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12.0
sec-Butylbenzene	135-98-8	11.0
Tert-Butylbenzene	98-06-6	5.9
Chrysene	218-01-9	1.0
Ethylbenzene	100-41-4	1.0
Fluoranthene	206-44-0	100
Benzo(b)Fluoranthene	205-99-2	1.0
Benzo(k)Fluoranthene	207-08-9	0.8
Fluorene	86-73-7	30
Isopropylbenzene	98-82-8	2.3
p-Isopropyltoluene	99-87-6	10.0
Naphthalene	91-20-3	12.0
n-Propylbenzene	103-65-1	3.9
Benzo(g,h,i)Perylene	191-24-2	100
Phenanthrene	85-01-8	100
Pyrene	129-00-0	100
Benzo(a)Pyrene	50-32-8	1.0
Indeno(1,2,3-cd)Pyrene	193-39-5	0.5
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Toluene	108-88-3	0.7
Xylene (Mixed)	1330-20-7	0.26

Table 4

Recommended Number of Soil Samples for Soil Imported To or Exported From a Site

Contaminant	VOCs[a]	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	Each composite sample for analysis is created from 3-5 discrete samples from representative locations in the fill.
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
➢ 1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER.[b]		

[a] VOC samples cannot be composited. Discrete samples must be taken to maximize the representativeness of the results.

[b] For example, a 3,000 cubic yard soil pile to be sampled and analyzed for VOCs would require 11 discrete representative samples. The same pile to be sampled for SVOCs would require 4 composite samples with each composite sample consisting of 3-5 discrete samples.

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Noble Metals Extraction Systems, LLC

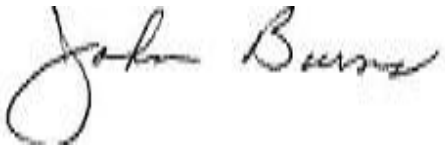
Dear Mr. Papworth:

As per our conversation in early August and as referenced in your letter of August 12, 2014 I have prepared a brief Statement Of Work (SOW) for the Lower Ley Creek Subsite of the Onondaga Lake Superfund Site, Syracuse, NY.

Materials identified for this SOW were obtained from the Final Feasibility Study Report Lower Ley Creek Subsite Of The Onondaga Lake Superfund Site, Syracuse NY. EPA Contract No: EP-W-10-007 and data obtained from the New York State Department Of Environmental Conservation.

Attached you will find a copy of any pages referenced form the Feasibility Study for your convenience.

Respectfully,



John Burns
Noble Metals Extraction Systems, LLC
775-846-9588 Cell

NOBLE METALS EXTRACTION SYSTEMS, LLC

Noble Metals Statement of Work
For Lower Ley Creek Sub Site and Wastbeds 9-15
At the Onondaga Lake Superfund Sites, Syracuse New York

August 21, 2014

1. PURPOSE

This Statement of Work (SOW) sets forth an alternative approach to remediate soils and sediments containing hazardous substances, pollutants or contaminants as defined in Appendix B of the FINAL FEASIBILITY REPORT LOWER LEY CREEK SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE, SYRACUSE NY. EPA Contract No:EP-w-10-007 (See Attachment). This SOW contains the following:

a. A brief description of the equipment required.
b. A description of its function.
c. An estimate of the total volume of material to be processed on a per weekly basis.
d. An estimate of operating cost per cubic yard.
e. A cost estimate to manufacture and assemble a complete remediation system with all site specific requirements in place.
f. A list of potential environmental and economic advantages and a time line of engineering, construction and on site assembly.

1.1 REMEDIAL ALTERNATIVE

While thermal treatment of soils or sediments to remove hazardous substances, pollutants or contaminants has been an accepted remedial alternative for organic analytes, it is typically not used where metals are the source of contamination. However, the metals extraction industry has had to deal with more complex ores over the past thirty years. As a result, thermal treatment of soils and sediments has become the method of choice in the industry. We combine the equipment and methodology used in thermal treatment of soils with highly efficient metal extraction equipment and methodology. As a result, we have an efficient system that can effectively deal with a variety of soil conditions.

1.2 SYSTEM OPERATION

Noble Metals remediation of soils or sediment containing hazardous substances, pollutants or contaminants is to first heat them (to a temperature typically used in mining applications to deal with sulfides) to approximately 800 degrees F. The organic analytes along with several of the metal analytes such as Mercury, Lead and Cadmium will be volatized and drawn off entering an oxidizer. The oxidizer operating at approximately 2000 degrees F breaks down the volatized analytes

into toxicants and carcinogens which are then captured and stabilized. The soil or sediment then passes thru a heat exchanger which cools the material to a temperature of approximately 150 degrees F. The remaining metals are them removed using standard mining methods appropriate to the metal analytes.

1.2.1 DESCRIPTION OF DISCHARGED MATERIALS

There are three categories of material discharged from the integrated system
.

a. Stabilized Toxicants and Carcinogens.
b. Base Metal Concentrates
c. Sterile Soil Matrix

The stabilized toxicants and carcinogens are easily disposed, typically in land fills. The base metal concentrates and the soil matrix both have economic value and can be sold to offset a portion of the costs.
The generation of electricity using the heat exchanger as a power source is also available. This is often used in remote locations to augment valuable consumables such as fuel for generators and could provide an additional income stream to help offset project costs.

1.3 PRODUCTION RATE

System design is based on a production capacity of 1000 tons per 24 hour day. Maintenance, weather conditions and other typical operating challenges may reduce the actual rate somewhat.

1.4 OPERATING COST

Direct operating costs of integrated systems used in the mining industry range from $90.00.00 to $135.00.00 per cubic yard. Considering the analytes listed in Appendix B (See Attachment) operational cost should trend toward the lower side of this range.

1.5 ENGINEERING, SITE SPECIFIC MODIFICATIONS, CONSTRUCTION AND ON SITE ASSEMBLY

A commercial operation history of more than 20 years world wide has created a vast data base covering many different soil and sediment conditions. The list of analytes from Appendix B (See Attachment) would not indicate the need for extensive research and development. It should require little engineering other than that required for integration of site specific modifications to existing designs. The construction of specific equipment not commercially available will be done at our facility in Marion Indiana. While no specific site has yet been determined, several locations currently exist which will be good candidates.

1.6 ENGINEERING, SITE SPECIFIC MODIFICATIONS, CONSTRUCTION AND ON SITE ASSEMBLY COSTS

Total cost will be greatly affected by the availability of key components required to assemble a complete integrated system. Based on current availability of key components cost should fall in a range of $7,000,000.00 to $10,000,000.00 USD.

A site evaluation fee of $750,000 will be required to facilitate an on-site evaluation. The site evaluation will include laboratory testing of bulk samples(to establish the site specific engineering criteria), overall engineering for site specific modifications. Noble Metals will reserve key components where available, and establish a representative model. We will also provide support and attendance at all public comment hearings if required. This fee will be applied to the cost of the integrated system and applied as a partial prepaid deposit amount. Should no further actions beyond the scope described above be required Noble Metals shall retain the fee as payment in full for services rendered.

1.7 ENVIRONMENTAL AND ECONOMIC ADVANTAGES

An environmental advantage is obtained by the elimination of and or reduction of analyte levels to meet Human Health Risk Assessment as obtained from Table 2,C. of the FINAL FEASIBILITY STUDY REPORT (See Attachment). This will reduce or eliminate any potential for contamination in the future.

There will be positive economic advantages for the local economy by the creation of well-paid long term jobs, the supply of commercially viable by-products, and the potential to supply electricity to the power grid. This equipment has a production life regularly exceeding 20 years and could be used for remediating waste beds 9-15. This could provide an ongoing economic benefit for the community.

1.8 TIME LINE OF ACTION

a. Present to October 1, 2014. Site evaluation, sample acquisition

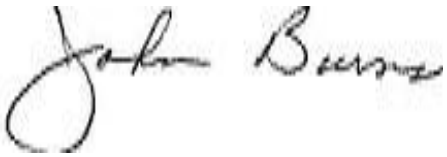
b. October 1, 2014 to November 30, 2014. Laboratory testing of bulk samples to establish minimum engineering criteria, engineering, reservation of available key components, and a model construction.

c. December 1, 2014 to December 15 2014. Provide a new SOW and scope of effort based upon tests results along with a follow-on contract.

d. December 16, 2014 to April 30, 2015. Acquisition, construction and site specific modifications competed and ready for shipment to site.

e. May 1, 2015 to May 31, 2015. On site assembly.

f. June 1, 2015. Integrated system available to accept soils and sediments.



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APPENDIX B

DEVELOPMENT OF SOIL AND SEDIMENT PRELIMINARY REMEDIATION GOALS

LOWER LEY CREEK SUBSITE OF THE ONONDAGA LAKE SUPERFUND SITE, SYRACUSE, NY

1.0 PRG CALCULATION SUMMARY

This appendix presents the information and rationale used in the identification of PRGs for the FS. PRGs were calculated following the assumptions and information (e.g., exposure assumptions, ingestion rates, etc.) presented in the HHRA and BERA. The Human Health and Ecological PRGs are presented in Table 1 and Table 2, respectively. The Human Health and Ecological PRG calculations are detailed in Tables 1.A through 1.J and Tables 2.A through 2.F, respectively.

1.1 HUMAN HEALTH PRGS

PRGs were calculated for exposure to all identified site COCs in site soil, sediment, and fish tissue. Site COCs were identified as contaminants contributing a cancer risk exceeding 1E-05 to a cumulative cancer risk greater than 1E-04, or a contaminant that contributed substantially to a non-cancer target organ hazard index (HI) greater than 1. Identification was based on the reasonable maximum exposure (RME) scenarios. To be consistent with the baseline HHRA, the inhalation exposure route was not considered in the PRG calculations. Because inhalation generally contributes negligibly to overall risk, this approach is appropriate.

1.1.1 Soil

The following COCs were identified for the site soil: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene, chromium, PCB-1248, and PCB-1260. The majority of the COCs were identified because of excessive contributions to cumulative cancer risks. PCB-1260 was identified solely because of contributions to non-cancer hazards.

For each of these COCs, PRGs were calculated for the following receptors: Adult Recreational Visitor, Older Child Recreational Visitor (6 to 16 years old), Younger Child Recreational Visitor (less than 6 years old), and Construction Worker. Calculated soil PRGs for these receptors are presented in Table 1, along with the New York Remedial Program Soil Cleanup Objectives. These values were compared to the calculated PRGs to identify the most conservative proposed cleanup level for each COC (most conservative PRG is shaded).

1.1.2 Sediment

The following COCs were identified in site sediment for at least one site receptor: 3-methylcholanthrene, benzo(a)pyrene, dibenzo(a,h)anthracene, PCB-1260, and vanadium. For

each of these COCs (where applicable), PRGs were calculated for the following receptors: Adult Recreational Visitor, Older Child Recreational Visitor (6 to 16 years old), and Younger Child Recreational Visitor (less than 6 years old). PRGs were not calculated for the Construction Worker because no COCs were identified for this receptor. Calculated sediment PRGs for these receptors are presented in Table 1. New York sediment screening values (for sediment direct contact) are not available. Accordingly, the most conservative calculated PRG is identified as the proposed PRG for each COC (most conservative PRG is shaded).

1.1.3 Fish Tissue

The following COCs were identified for exposure to fish tissue: PCB-1254, PCB-1260, total PCBs, total dioxins/furans (as TEQ), dieldrin, arsenic, chromium, and mercury. For these COCs, PRGs were calculated for the Adult Recreational Visitor, Older Child Recreational Visitor (6 to 16 years old), and Younger Child Recreational Visitor (less than 6 years old). PRGs were not calculated for the Construction Worker because this exposure pathway was identified as incomplete.

After the calculation of fish tissue PRGs (mg/kg fish tissue), an associated sediment PRG concentration (mg/kg sediment) was calculated using site-specific biota-sediment accumulation factors (BSAFs). This sediment PRG concentration is protective of the fish ingestion pathway. Site-specific BSAFs were calculated by dividing the fish tissue exposure point concentration (EPC) for each contaminant by the sediment EPC. These EPCs (95% UCLs) were obtained from the Lower Ley Creek BERA. The calculation of fish tissue PRGs is detailed in Tables 1.H through 1.J.

Calculated fish tissue PRGs (in both mg/kg of fish tissue and mg/kg of sediment) are presented in Table 1. Also presented in Table 1 are the New York Sediment Screening Criteria for Human Health Bioaccumulation (mg/kg of sediment). These values were compared to the calculated PRGs to identify the most conservative proposed cleanup level for each COC (most conservative PRG is shaded).

1.2 ECOLOGICAL PRGS

Ecological PRGs were calculated or identified for the ecological receptors and sediment COCs identified in the BERA. These PRGs are summarized in Table 2. In addition, soil at Lower Ley Creek was evaluated with respect to ecological receptors to determine the extent of potential risk associated with exposure of ecological receptors to site surface soil. These evaluations are discussed below.

1.2.1 Sediment

Ecological receptors identified within the BERA as having potential risk from exposure to site sediment include upper level trophic receptors (piscivorous mammals and birds) and benthic invertebrates. For upper trophic level receptors, PRGs were calculated (using a food web) to be protective of the mink (piscivorous mammal) and belted kingfisher (piscivorous bird). These two receptors were the most conservative of the four evaluated in the BERA. The food