PORSF
11.3.245.1V57

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.U.36-0144 FAX 503/323-8793

October 20, 1994

Mr. Doug Coenen
Division President and General Manager
Oregon Waste Systems, Inc.
Columbia Ridge Landfill & Recycling
18177 Cedar Springs Lane
Arlington, OR 97812

SENT VIA FACSIMILE (503) 454-2133

Dear Doug:

Proper sampling protocols and accurate characterization of shredder residue are not only important but critical to obtaining representative samples and a complete understanding of the physical and chemical constituencies of shredder residue. As you are aware, shredder residue material is not homogeneous in nature, and proper timed weighted volume sampling needs to occur, in order to assure representative samples are obtained and analyzed.

As part of our follow-up of monitoring the sampling work done at our Portland facility, performed during September 1994, we believe that the samples obtained were improperly collected and therefore are not representative of the shredder residue material sent to you. Specifically, the sampler described that the sampling performed in September excluded the larger pieces of residue, such as fabric, plastic, foam, and rubber. These materials may represent up to 50% of the weight of shredder residue. Consequently, the samples obtained contained only "fine" materials.

As you know, Schnitzer has tested its shredder residue for a number of years (heavy metals, PCBs) and have not experienced exceedances. As recent examples of that I would call your attention to the attached addendum, summarizing lab results for samples taken during March 1993, March 1994 and August 1994. Moreover, we have not experienced any significant change in the mix or source of scrap metal.

We do not believe the shredder residue material recently transported to Arlington have concentrations of contaminants of concern, nor do we have any reason to believe they are hazardous in nature. However, this is to request that you return the above mentioned materials to us so that we can further evaluate the material.

USEPA SF
1336473

SCHN00244017

As soon as we have completed sample results, conducted in conformance with nationally accepted protocols for shredder residue, we will forward them to your office.

Thank you for your assistance in this matter. Please call if you have any questions or would like additional information.

Sincerely,

SCHNITZER STEEL INDUSTRIES, INC.

Daniel Lee

Daniel Lee

Enclosures (Addendum)

cc:Tom Zelenka
Terry Glucoft

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	Sampled:	Oct 24, 1994
P.O. Box 10047	Sample Descript:	Portland Sample, TCLP Extract (EPA 1311)	Received:	Oct 25, 1994
Portland, OR 97210-0047	Analysis Method:	EPA 8080	Extracted:	Oct 28, 1994
Attention: Daniel Lee	Lab Number:	9410F46 -01	Analyzed:	Oct 31, 1994
			Reported:	Nov 1, 1994

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit µg/L	Sample Results µg/L
PCB-1016	10	N.D.
PCB-1221	40	N.D.
PCB-1232	10	N.D.
PCB-1242	10	N.D.
PCB-1248	10	N.D.
PCB-1254	10	N.D.
PCB-1260	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

9410F46.SST <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	Sampled:	Oct 24, 1994
P.O. Box 10047	Sample Descript:	Portland Sample	Received:	Oct 25, 1994
Portland, OR 97210-0047	Analysis Method:	EPA 8080	Extracted:	Oct 31, 1994
Attention: Daniel Lee	Lab Number:	9410F46-01	Analyzed:	Nov 1, 1994
			Reported:	Nov 1, 1994

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit µg/Kg	Sample Results µg/Kg
PCB-1016	4,000	N.D.
PCB-1221	16,000	N.D.
PCB-1232	4,000	N.D.
PCB-1242	4,000	9,200
PCB-1248	4,000	N.D.
PCB-1254	4,000	N.D.
PCB-1260	4,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

9410F46.SST <2>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	Sampled:	Oct 24, 1994
P.O. Box 10047	Sample Descript:	TCLP Extract (EPA 1311), Portland Sample	Received:	Oct 25, 1994
Portland, OR 97210-0047	Analysis Method:	EPA 6010/7470		
Attention: Daniel Lee	Lab Number:	9410F46-01	Analyzed:	Oct 26, 1994
			Reported:	Nov 1, 1994

TCLP METALS

Analyte	EPA HW No.	Detection Limit mg/L (ppm)	Regulatory Level mg/L (ppm)	Sample Results mg/L (ppm)
Arsenic	D004	0.10	5.0	N.D.
Barium	D005	0.10	100	2.2
Cadmium	D006	0.010	1.0	0.023
Chromium	D007	0.10	5.0	0.015
Lead	D008	0.10	5.0	0.27
Mercury	D009	0.00010	0.2	0.00010
Selenium	D010	0.10	1.0	0.15
Silver	D011	0.010	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

9410F46.SST <3>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410F46-01	Reported: Nov 2, 1994

QUALITY CONTROL DATA REPORT

Analyte:	PCB 1260
QC Batch#:	GC1024940PCBEXA
Analy. Method:	EPA 8080
Prep. Method:	EPA 3510

Analyst:	A. Savva
MS/MSD #:	BLK102494
Sample Conc.:	N.D.
Prepared Date:	10/24/94
Analyzed Date:	10/25/94
Instrument I.D.#:	GCHP10
Conc. Spiked:	500 µg/L
Result:	400
MS % Recovery:	80
Dup. Result:	380
MSD % Recov.:	76
RPD:	5.1
RPD Limit:	

LCS #:	-
Prepared Date:	-
Analyzed Date:	-
Instrument I.D.#:	-
Conc. Spiked:	-
LCS Result:	-
LCS % Recov.:	-

MS/MSD	8-127
LCS	
Control Limits	

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9410F46.SST <4>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff		
P.O. Box 10047	Matrix:	Liquid		
Portland, OR 97210-0047				
Attention: Daniel Lee	Work Order #:	9410F46-01	Reported:	Nov 2, 1994

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME1026946010MDB	ME1026946010MDB	ME1026946010MDB	ME1026946010MDB
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	3010	3010	3010	3010
Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
MS/MSD #:	9410F1801	9410F1801	9410F1801	9410F1801
Sample Conc.:	N.D.	N.D.	0.16	0.057
Prepared Date:	10/26/94	10/26/94	10/26/94	10/26/94
Analyzed Date:	10/26/94	10/26/94	10/26/94	10/26/94
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	1.0	1.0	1.2	1.1
MS % Recovery:	100	100	100	100
Dup. Result:	1.0	1.0	1.2	1.1
MSD % Recov.:	100	100	100	100
RPD:	0.0	0.0	0.0	0.0
RPD Limit:	0-30%	0-30%	0-30%	0-30%

LCS #:	BLK102694	BLK102694	BLK102694	BLK102694
Prepared Date:	10/26/94	10/26/94	10/26/94	10/26/94
Analyzed Date:	10/26/94	10/26/94	10/26/94	10/26/94
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	1.0	1.0	0.99	0.99
LCS % Recov.:	100	100	99	99

MS/MSD LCS Control Limits	75-125	75-125	75-125	75-125

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9410F46.SST <5>

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT: Schnitzer Steel Products	REPORT TO: Daniel Lee	TURNAROUND TIME:	
ADDRESS: PO Box 10047 Portland, OR 97210-0047	BILLING TO: SSP Portland	**pH = 10 DAY	8 HR
		24 HR / 48 HR ✓	72 HR
PHONE: (503) 434-3324 Fax (503) 434-5734		5 DAY / 10 DAY	15 DAY
PROJECT NAME/SITE: ASF/ Portland Flutt	PO#/BILLING REFERENCE:		

ANALYSIS REQUESTED

TCLP-EPA 1311
PCB-EPA 8080
p/s fax the results

SAMPLER: Daniel Lee — DATE: 10-24-94

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	*** TOTAL PCB'S	REMARKS
Portland	ASF	1	Bag	10-24-94	TCLP & RCRA Metals									9410F46
SUMP	BFI LEACHATE	1	BTL	3:00p										
BFI SAMPLER														

SAMPLE NUMBER

*EXTRACTION TEST WITH BFI LANDFILL LEACHATE

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	LEACHATE PARAMETERS AT SUMP
			DATE TAKEN FROM SUMP: 19
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	TEMPERATURE: F
			pH:

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY: Daniel Lee	DATE TIME: 10/25/94 3:50p	RECEIVED BY: Pete Hale 4886 3:51pm 10/25/94	TRAVEL TIME:
			ON SITE TIME:
RELINQUISHED BY: Pete Hale	DATE TIME: 10/25/94 4:55	RECEIVED BY:	OTHER:
RELINQUISHED BY:	DATE TIME: 10/25/94 1655	RECEIVED IN LAB BY:	WERE SAMPLES: PRESERVED? / IN GOOD CONDITION? — YES / NO
	***NOTE: PCB'S FROM EXTRACT - REPORT ISOMERS		BFI TASK / MONTAGNO TASK

SCHN00244025

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 •, FAX (415) 364-9233

Sample
10/24/94

FAX TRANSMITTAL

TO:

Name: Daniel Lee
Company: Schnitzer Steel
Fax #: (503) 434-5739

FROM:

Name: Mark Cargasacchi
Sequoia Analytical
Telephone: (415) 364-9600
Fax: (415) 364-9233

Date: 11-1-94
Report #:
Number of pages (including cover page): 4

COMMENTS:

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	Sampled:	Oct 24, 1994
P.O. Box 10047	Sample Descript:	Portland Sample, TCLP Extract (EPA 1311)	Received:	Oct 25, 1994
Portland, OR 97210-0047	Analysis Method:	EPA 8080	Extracted:	Oct 28, 1994
Attention: Daniel Lee	Lab Number:	9410F46 -01	Analyzed:	Oct 31, 1994
			Reported:	Nov 1, 1994

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit µg/L	Sample Results µg/L
PCB-1016	10	N.D.
PCB-1221	40	N.D.
PCB-1232	10	N.D.
PCB-1242	10	N.D.
PCB-1248	10	N.D.
PCB-1254	10	N.D.
PCB-1260	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

9410F46.SST <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	Sampled:	Oct 24, 1994
P.O. Box 10047	Sample Descript:	Portland Sample	Received:	Oct 25, 1994
Portland, OR 97210-0047	Analysis Method:	EPA 8080	Extracted:	Oct 31, 1994
Attention: Daniel Lee	Lab Number:	9410F46-01	Analyzed:	Nov 1, 1994
			Reported:	Nov 1, 1994

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit µg/Kg	Sample Results µg/Kg
PCB-1016	4,000	N.D.
PCB-1221	16,000	N.D.
PCB-1232	4,000	N.D.
PCB-1242	4,000	9,200
PCB-1248	4,000	N.D.
PCB-1254	4,000	N.D.
PCB-1260	4,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

9410F46.SST <2>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	Portland Fluff	Sampled:	Oct 24, 1994
P.O. Box 10047	Sample Descript:	TCLP Extract (EPA 1311), Portland Sample	Received:	Oct 25, 1994
Portland, OR 97210-0047	Analysis Method:	EPA 6010/7470		
Attention: Daniel Lee	Lab Number:	9410F46-01	Analyzed:	Oct 26, 1994
			Reported:	Nov 1, 1994

TCLP METALS

Analyte	EPA HW No.	Detection Limit mg/L (ppm)	Regulatory Level mg/L (ppm)	Sample Results mg/L (ppm)
Arsenic	D004	0.10	5.0	N.D.
Barium	D005	0.10	100	2.2
Cadmium	D006	0.010	1.0	0.023
Chromium	D007	0.10	5.0	0.015
Lead	D008	0.10	5.0	0.27
Mercury	D009	0.00010	0.2	0.00010
Selenium	D010	0.10	1.0	0.15
Silver	D011	0.010	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

9410F46.SST <3>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 4 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
Attention: Daniel Lee	Lab Number: 9410H99-01	Reported: 11/03/94

Instrument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
PCB-1016	9600	N.D.
PCB-1221	38000	N.D.
PCB-1232	9600	N.D.
PCB-1242	**9600**	**11000**
PCB-1248	9600	N.D.
PCB-1254	9600	N.D.
PCB-1260	9600	N.D.

Surrogates	Control Limits %		% Recovery
Dibutylchlorendate	30	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 4 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
Attention: Daniel Lee	Lab Number: 9410H99-01	Reported: 11/03/94

QC Batch Number: GC110294OPCBEXA
Instrument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit ug/L	Sample Results ug/L
PCB-1016	10	N.D.
PCB-1221	40	N.D.
PCB-1232	10	N.D.
PCB-1242	10	N.D.
PCB-1248	10	N.D.
PCB-1254	10	N.D.
PCB-1260	10	N.D.

Surrogates	Control Limits %		% Recovery
Dibutylchlorendate	50	150	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 4 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	
	Analysis Method: EPA6010/7470	Analyzed: 11/01/94
Attention: Daniel Lee	Lab Number: 9410H99-01	Reported: 11/03/94

TCLP Metals

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Arsenic, As	5.0	0.10	N.D.
Barium,Ba	**100**	**0.10**	**1.5**
Cadmium, Cd	**1.0**	**0.010**	**0.30**
Chromium, Cr	**5.0**	**0.010**	**0.064**
Lead, Pb	**5.0**	**0.10**	**0.83**
Mercury,Hg	**0.2**	**0.00010**	**0.00020**
Selenium, Se	1.0	0.10	N.D.
Silver, Ag	5.0	0.010	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Solid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H99 -01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	Mercury	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME1031942451M4E	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA
Analy. Method:	EPA 245.1	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	245.1	3010	3010	3010	3010
Analyst:	M. Rocklein	S. O'Donnell	S. O'Donnell	S. O'Donnell	S. O'Donnell
MS/MSD #:	9410F1801	9410I5402	9410I5402	9410I5402	9410I5402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	0.46
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.0036	0.98	0.97	0.94	1.4
MS % Recovery:	90	98	97	94	94
Dup. Result:	0.0036	0.93	0.93	0.90	1.3
MSD % Recov.:	90	93	93	90	84
RPD:	0.0	5.2	4.2	4.3	11
RPD Limit:	0-30	0-30	0-30	0-30	0-30
LCS #:	BLK103194	BLK110194	BLK110194	BLK110194	BLK110194
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	0.0037	0.98	0.96	0.95	0.96
LCS % Recov.:	93	98	96	95	96
MS/MSD LCS Control Limits	75-125	75-125	75-125	75-125	75-125

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9410H99.SST <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H99-01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	PCB 1260
QC Batch#:	GC1102940PCBEXA
Analy. Method:	EPA 8080
Prep. Method:	EPA 3510

Analyst:	A. Savva
MS/MSD #:	BLK110294
Sample Conc.:	N.D.
Prepared Date:	11/2/94
Analyzed Date:	11/2/94
Instrument I.D.#:	GCHP21
Conc. Spiked:	500 µg/L
Result:	445
MS % Recovery:	89
Dup. Result:	455
MSD % Recov.:	91
RPD:	2.2
RPD Limit:	

LCS #:	-
Prepared Date:	-
Analyzed Date:	-
Instrument I.D.#:	-
Conc. Spiked:	-
LCS Result:	-
LCS % Recov.:	-

MS/MSD	8-127
LCS	
Control Limits	

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9410H99.SST <2>

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	

SAMPLER: DANIEL LEE — DATE: 10-26-94

ANALYSIS REQUESTED: TCLP-EPA 1311; PCB-EPA 8080; 9410H99

REMARKS: PLEASE FAX RESULTS

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	*** TOTAL PCB'S	SAMPLE NUMBER
PORTLAND	ASF	4 of 4	BAGS	10-26-94	TC	LP	8	RCRA	METALS				✓	
SUMP	BFI LEACHATE		BTL	3:00pm										
BFI SAMPLER														

*EXTRACTION TEST WITH BFI LANDFILL LEACHATE -α

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
K. Wadsworth	10/28/94	11:30am	[signature]
[signature]	10/28/94	1:00	

LEACHATE PARAMETERS AT SUMP: DATE TAKEN FROM SUMP 19; TEMPERATURE F; pH

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
	10/28/94	1300	[signature]

TRAVEL TIME:

ON SITE TIME:

OTHER:

WERE SAMPLES:	YES	NO
PRESERVED?		
IN GOOD CONDITION?		

BFI TASK

MONTAGNO TASK

***NOTE: PCB'S FROM EXTRACT - REPORT ISOMERS

SCHN00244036

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 3 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
Attention: Daniel Lee	Lab Number: 9410H98-01	Reported: 11/03/94

Instrument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
PCB-1016	9600	N.D.
PCB-1221	38000	N.D.
PCB-1232	9600	N.D.
PCB-1242	**9600**	**12000**
PCB-1248	9600	N.D.
PCB-1254	9600	N.D.
PCB-1260	9600	N.D.

Surrogates	Control Limits %		% Recovery
Dibutylchlorendate	30	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

SCHN00244038

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 3 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
Attention: Daniel Lee	Lab Number: 9410H98-01	Reported: 11/03/94

QC Batch Number: GC110294OPCBEXA
Instrument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit ug/L	Sample Results ug/L
PCB-1016	10	N.D.
PCB-1221	40	N.D.
PCB-1232	10	N.D.
PCB-1242	10	N.D.
PCB-1248	10	N.D.
PCB-1254	10	N.D.
PCB-1260	10	N.D.

Surrogates	Control Limits %		% Recovery
Dibutylchlorendate	50	150	92

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

SCHN00244039

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 3 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	
	Analysis Method: EPA6010/7470	Analyzed: 11/01/94
Attention: Daniel Lee	Lab Number: 9410H98-01	Reported: 11/03/94

TCLP Metals

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Arsenic, As	5.0	0.10	N.D.
Barium,Ba	**100**	**0.10**	**1.7**
Cadmium, Cd	**1.0**	**0.010**	**0.22**
Chromium, Cr	**5.0**	**0.010**	**0.10**
Lead, Pb	**5.0**	**0.10**	**1.0**
Mercury,Hg	0.2	0.00010	N.D.
Selenium, Se	**1.0**	**0.10**	**0.14**
Silver, Ag	5.0	0.010	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H98 -01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	PCB 1260
QC Batch#:	GC1102940PCBEXA
Analy. Method:	EPA 8080
Prep. Method:	EPA 3510

Analyst:	A. Savva
MS/MSD #:	BLK110294
Sample Conc.:	N.D.
Prepared Date:	11/2/94
Analyzed Date:	11/2/94
Instrument I.D.#:	GCHP21
Conc. Spiked:	500 µg/L
Result:	445
MS % Recovery:	89
Dup. Result:	455
MSD % Recov.:	91
RPD:	2.2
RPD Limit:	

LCS #:	-
Prepared Date:	-
Analyzed Date:	-
Instrument I.D.#:	-
Conc. Spiked:	-
LCS Result:	-
LCS % Recov.:	-

MS/MSD LCS Control Limits	8-127

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9410H98.SST <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H98-01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	Mercury	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME1031942451M4E	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA
Analy. Method:	EPA 245.1	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	245.1	3010	3010	3010	3010
Analyst:	M. Rocklein	S. O'Donnell	S. O'Donnell	S. O'Donnell	S. O'Donnell
MS/MSD #:	9410F1801	9410I5402	9410I5402	9410I5402	9410I5402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	0.46
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.0036	0.98	0.97	0.94	1.4
MS % Recovery:	90	98	97	94	94
Dup. Result:	0.0036	0.93	0.93	0.90	1.3
MSD % Recov.:	90	93	93	90	84
RPD:	0.0	5.2	4.2	4.3	11
RPD Limit:	0-30	0-30	0-30	0-30	0-30
LCS #:	BLK103194	BLK110194	BLK110194	BLK110194	BLK110194
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	0.0037	0.98	0.96	0.95	0.96
LCS % Recov.:	93	98	96	95	96
MS/MSD LCS Control Limits	75-125	75-125	75-125	75-125	75-125

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9410H98.SST <2>

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR; 24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	*** TOTAL PCB'S	REMARKS
PORTLAND	ASF	3 of 4	BAGS	10-26-94	TC	LP	8	RCRA	METALS				✓	*EXTRACTION TEST WITH BFI LANDFILL LEACHATE -01
SUMP	BFI LEACHATE		BTL	3:00pm										
BFI SAMPLER														

TCLP-EPA 1311
PCB-EPA 8080
9410H98
PLEASE FAX RESULTS

SAMPLE NUMBER

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
R. Wallace	10/28/94	11:30 A.m	[signature]
[signature]	10/28/94	1:00	

LEACHATE PARAMETERS AT SUMP

DATE TAKEN FROM SUMP	19
TEMPERATURE	F
pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
	10/28/94	1200	RECEIVED IN LAB BY: [signature] 10

TRAVEL TIME:
ON SITE TIME:
OTHER:

WERE SAMPLES:	YES	NO
PRESERVED?		
IN GOOD CONDITION?		

BFI TASK
MONTAGNO TASK

***NOTE: PCB'S FROM EXTRACT - REPORT ISOMERS

SCHN00244043

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 2 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
Attention: Daniel Lee	Lab Number: 9410H97-01	Reported: 11/03/94

Instrument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
PCB-1016	9600	N.D.
PCB-1221	38000	N.D.
PCB-1232	9600	N.D.
PCB-1242	**9600**	**19000**
PCB-1248	9600	N.D.
PCB-1254	9600	N.D.
PCB-1260	9600	N.D.

Surrogates	Control Limits %		% Recovery
Dibutylchlorendate	30	150	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

SCHN00244044

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 2 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
Attention: Daniel Lee	Lab Number: 9410H97-01	Reported: 11/03/94

QC Batch Number: GC110294OPCBEXA
Instrument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

Analyte	Detection Limit ug/L	Sample Results ug/L
PCB-1016	10	N.D.
PCB-1221	40	N.D.
PCB-1232	10	N.D.
PCB-1242	10	N.D.
PCB-1248	10	N.D.
PCB-1254	10	N.D.
PCB-1260	10	N.D.

Surrogates	Control Limits %		% Recovery
Dibutylchlorendate	50	150	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M. Cargasacchi
Project Manager

SCHN00244045

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
P.O. Box 10047	Sample Descript: Portland 2 of 4	Received: 10/28/94
Portland, OR 97210-0047	Matrix: SOLID	
	Analysis Method: EPA6010/7470	Analyzed: 11/01/94
Attention: Daniel Lee	Lab Number: 9410H97-01	Reported: 11/03/94

TCLP Metals

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Arsenic, As	5.0	0.10	N.D.
Barium,Ba	**100**	**0.10**	**1.4**
Cadmium, Cd	**1.0**	**0.010**	**0.31**
Chromium, Cr	**5.0**	**0.010**	**0.10**
Lead, Pb	**5.0**	**0.10**	**1.6**
Mercury,Hg	**0.2**	**0.00010**	**0.00012**
Selenium, Se	**1.0**	**0.10**	**0.10**
Silver, Ag	5.0	0.010	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

M[illegible] Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H97 -01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	PCB 1260
QC Batch#:	GC1102940PCBEXA
Analy. Method:	EPA 8080
Prep. Method:	EPA 3510

Analyst:	A. Savva
MS/MSD #:	BLK110294
Sample Conc.:	N.D.
Prepared Date:	11/2/94
Analyzed Date:	11/2/94
Instrument I.D.#:	GCHP21
Conc. Spiked:	500 µg/L
Result:	445
MS % Recovery:	89
Dup. Result:	455
MSD % Recov.:	91
RPD:	2.2
RPD Limit:	

LCS #:	-
Prepared Date:	-
Analyzed Date:	-
Instrument I.D.#:	-
Conc. Spiked:	-
LCS Result:	-
LCS % Recov.:	-

MS/MSD	8-127
LCS	
Control Limits	

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9410H97.SST <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H97-01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	Mercury	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME1031942451M4E	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA
Analy. Method:	EPA 245.1	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	245.1	3010	3010	3010	3010
Analyst:	M. Rocklein	S. O'Donnell	S. O'Donnell	S. O'Donnell	S. O'Donnell
MS/MSD #:	9410F1801	9410I5402	9410I5402	9410I5402	9410I5402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	0.46
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.0036	0.98	0.97	0.94	1.4
MS % Recovery:	90	98	97	94	94
Dup. Result:	0.0036	0.93	0.93	0.90	1.3
MSD % Recov.:	90	93	93	90	84
RPD:	0.0	5.2	4.2	4.3	11
RPD Limit:	0-30	0-30	0-30	0-30	0-30
LCS #:	BLK103194	BLK110194	BLK110194	BLK110194	BLK110194
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	0.0037	0.98	0.96	0.95	0.96
LCS % Recov.:	93	98	96	95	96
MS/MSD LCS Control Limits	75-125	75-125	75-125	75-125	75-125

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9410H97.SST <2>

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME:
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	**pH = 10 DAY; 8 HR; 24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	TOTAL PCB'S	REMARKS
PORTLAND	ASF	2 of 4	BAGS	10-26-94	TC	LP	8	RCRA	METALS				✓	*EXTRACTION TEST WITH BFI LANDFILL LEACHATE
SUMP	BFI LEACHATE		BTL	3:00pm										
BFI SAMPLER														

TCLP-EPA 1311
PCB-EPA 8080
9410497
PLEASE FAX RESULTS

SAMPLE NUMBER

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
R. Wiedbrauk	10/28/94	11:30 AM	[signature]
[signature]	10/28/94	1:00	

LEACHATE PARAMETERS AT SUMP

DATE TAKEN FROM SUMP	19
TEMPERATURE	F
pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
	10/28/94	1300	[signature]

TRAVEL TIME:
ON SITE TIME:
OTHER:

WERE SAMPLES:	YES	NO
PRESERVED?		
IN GOOD CONDITION?		

BFI TASK
MONTAGNO TASK

***NOTE: PCB'S FROM EXTRACT + REPORT ISOMERS

SCHN00244049

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H88 -01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	PCB 1260
QC Batch#:	GC1102940PCBEXA
Analy. Method:	EPA 8080
Prep. Method:	EPA 3510

Analyst:	A. Savva
MS/MSD #:	BLK110294
Sample Conc.:	N.D.
Prepared Date:	11/2/94
Analyzed Date:	11/2/94
Instrument I.D.#:	GCHP21
Conc. Spiked:	500 µg/L
Result:	445
MS % Recovery:	89
Dup. Result:	455
MSD % Recov.:	91
RPD:	2.2
RPD Limit:	

LCS #:	-
Prepared Date:	-
Analyzed Date:	-
Instrument I.D.#:	-
Conc. Spiked:	-
LCS Result:	-
LCS % Recov.:	-

MS/MSD	8-127
LCS	
Control Limits	

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9410H88.SST <1>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Schnitzer Steel Products	Client Project ID:	TCLP (EPA 1311)	
P.O. Box 10047	Matrix:	Liquid	
Portland, OR 97210-0047			
Attention: Daniel Lee	Work Order #:	9410H88-01	Reported: Nov 4, 1994

QUALITY CONTROL DATA REPORT

Analyte:	Mercury	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME1031942451M4E	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA	ME1101946010MDA
Analy. Method:	EPA 245.1	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	245.1	3010	3010	3010	3010
Analyst:	M. Rocklein	S. O'Donnell	S. O'Donnell	S. O'Donnell	S. O'Donnell
MS/MSD #:	9410F1801	9410I5402	9410I5402	9410I5402	9410I5402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	0.46
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.0036	0.98	0.97	0.94	1.4
MS % Recovery:	90	98	97	94	94
Dup. Result:	0.0036	0.93	0.93	0.90	1.3
MSD % Recov.:	90	93	93	90	84
RPD:	0.0	5.2	4.2	4.3	11
RPD Limit:	0-30	0-30	0-30	0-30	0-30
LCS #:	BLK103194	BLK110194	BLK110194	BLK110194	BLK110194
Prepared Date:	10/31/94	11/1/94	11/1/94	11/1/94	11/1/94
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	MV1	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	0.0040 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	0.0037	0.98	0.96	0.95	0.96
LCS % Recov.:	93	98	96	95	96
MS/MSD LCS Control Limits	75-125	75-125	75-125	75-125	75-125

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9410H88.SST <2>

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR; 24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	** TOTAL PCB'S	REMARKS
PORTLAND	ASF	1 of 4	BAGS	10-26-94	TC	LP	8	RCRA	METALS				✓	*EXTRACTION TEST WITH BFI LANDFILL LEACHATE
SUMP	BFI LEACHATE		BTL	3:00pm										
BFI SAMPLER														

TCLP - EPA 1311
PCB - EPA 8080
9410
PLEASE FAX RESULTS

SAMPLE NUMBER: H88

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
R. Wiedenbeck	10/28/94	11:30am	Amy Fattebert
Amy Fattebert	10/28/94	1:00	

LEACHATE PARAMETERS AT SUMP

DATE TAKEN FROM SUMP	19
TEMPERATURE	F
pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
	10/28/94	1300	

TRAVEL TIME:
ON SITE TIME:
OTHER:

WERE SAMPLES:	YES	NO
PRESERVED?		
IN GOOD CONDITION?		

BFI TASK #:
MONTAGNO TASK

***NOTE: PCB'S FROM EXTRACT - REPORT ISOMERS

SCHN00244056

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Samples
10/26/94

FAX TRANSMITTAL

TO:

Name: Daniel Lee
Company: Schnitzer Steel
Fax #: (503) 434-5739

FROM:

Name: MARK CARGASACCHI
Sequoia Analytical
Telephone: (415) 364-9600
Fax: (415) 364-9233

Date: 11-3-94
Report #:
Number of pages (including cover page): 13

COMMENTS:

QC will follow later with hardcopy in mail.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 1 of 4 Matrix: SOLID Analysis Method: EPA 8080 Lab Number: 9410H88-01	Sampled: 10/26/94 Received: 10/28/94 Extracted: 11/02/94 Analyzed: 11/03/94 Reported: 11/03/94

trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/Kg	Sample Results ug/Kg
CB-1016	9600	N.D.
CB-1221	38000	N.D.
CB-1232	9600	N.D.
CB-1242	9600	16000
CB-1248	9600	N.D.
CB-1254	9600	N.D.
CB-1260	9600	N.D.

urrogates	Control Limits %		% Recovery
ibutylchlorendate	30	150	0

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

ohnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 1 of 4 Matrix: SOLID Analysis Method: EPA 8080 Lab Number: 9410H88-01	Sampled: 10/26/94 Received: 10/28/94 Extracted: 11/02/94 Analyzed: 11/03/94 Reported: 11/03/94

; Batch Number: GC110294OPCBEXA
trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/L	Sample Results ug/L
CB-1016	10	N.D.
CB-1221	40	N.D.
CB-1232	10	N.D.
CB-1242	10	N.D.
CB-1248	10	N.D.
CB-1254	10	N.D.
CB-1260	10	N.D.

urrogates	Control Limits %		% Recovery
ibutylchlorendate	50	150	98

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

:hnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/28/94
O. Box 10047	Sample Descript: Portland 1 of 4	Received: 10/28/94
ɔrtland, OR 97210-0047	Matrix: SOLID	
	Analysis Method: EPA6010/7470	Analyzed: 11/01/94
tention: Daniel Lee	Lab Number: 9410H88-01	Reported: 11/03/94

TCLP Metals

ıalyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
ɜenic, As	5.0	0.10	N.D.
ırium,Ba	100	0.10	1.9
ıdmium, Cd	1.0	0.010	0.17
hromium, Cr	5.0	0.010	0.083
ıad, Pb	5.0	0.10	0.52
ercury,Hg	0.2	0.00010	0.00014
ıenium, Se	1.0	0.10	0.20
ıver, Ag	5.0	0.010	N.D.

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 2 of 4 Matrix: SOLID Analysis Method: EPA 8080 Lab Number: 9410H97-01	Sampled: 10/26/94 Received: 10/28/94 Extracted: 11/02/94 Analyzed: 11/03/94 Reported: 11/03/94

trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/Kg	Sample Results ug/Kg
CB-1016	9600	N.D.
CB-1221	36000	N.D.
CB-1232	9600	N.D.
CB-1242	9600	19000
CB-1248	9600	N.D.
CB-1254	9600	N.D.
CB-1260	9600	N.D.

urrogates	Control Limits %		% Recovery
ibutylchlorendate	30	150	Q

lytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 2 of 4 Matrix: SOLID Analysis Method: EPA 8080 Lab Number: 9410H97-01	Sampled: 10/28/94 Received: 10/28/94 Extracted: 11/02/94 Analyzed: 11/03/94 Reported: 11/03/94

; Batch Number: GC110294OPCBEXA
trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/L	Sample Results ug/L
CB-1016	10	N.D.
CB-1221	40	N.D.
CB-1232	10	N.D.
CB-1242	10	N.D.
CB-1248	10	N.D.
CB-1254	10	N.D.
CB-1260	10	N.D.

urrogates	Control Limits %		% Recovery
ibutylchlorendate	50	150	93

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 2 of 4 Matrix: SOLID Analysis Method: EPA6010/7470 Lab Number: 9410H97-01	Sampled: 10/26/94 Received: 10/26/94 Analyzed: 11/01/94 Reported: 11/03/94

TCLP Metals

nalyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
rsenic, As	5.0	0.10	N.D.
arium,Ba	100	0.10	1.4
admium, Cd	1.0	0.010	0.31
hromium, Cr	5.0	0.010	0.10
ead, Pb	5.0	0.10	1.8
lercury,Hg	0.2	0.00010	0.00012
elenium, Se	1.0	0.10	0.10
ilver, Ag	5.0	0.010	N.D.

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
.O. Box 10047	Sample Descript: Portland 3 of 4	Received: 10/28/94
ortland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
ttention: Daniel Lee	Lab Number: 9410H98-01	Reported: 11/03/94

trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/Kg	Sample Results ug/Kg
CB-1016	9600	N.D.
CB-1221	38000	N.D.
CB-1232	9600	N.D.
CB-1242	9600	12000
CB-1248	9600	N.D.
CB-1254	9600	N.D.
CB-1260	9600	N.D.

urrogates	Control Limits %		% Recovery
butylchlorendate	30	150	Q

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
.O. Box 10047	Sample Descript: Portland 3 of 4	Received: 10/28/94
ortland, OR 97210-0047	Matrix: SOLID	Extracted: 11/02/94
	Analysis Method: EPA 8080	Analyzed: 11/03/94
tention: Daniel Lee	Lab Number: 9410H98-01	Reported: 11/03/94

: Batch Number: GC110294OPCBEXA
trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/L	Sample Results ug/L
CB-1016	10	N.D.
CB-1221	40	N.D.
CB-1232	10	N.D.
CB-1242	10	N.D.
CB-1248	10	N.D.
CB-1254	10	N.D.
CB-1260	10	N.D.

urrogates	Control Limits %		% Recovery
lbutylchlorendate	50	150	92

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

ohnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 3 of 4 Matrix: SOLID Analysis Method: EPA6010/7470 Lab Number: 9410H98-01	Sampled: 10/26/94 Received: 10/28/94 Analyzed: 11/01/94 Reported: 11/03/94

TCLP Metals

nalyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
rsenic, As	5.0	0.10	N.D.
arium, Ba	100	0.10	1.7
admium, Cd	1.0	0.010	0.22
hromium, Cr	5.0	0.010	0.10
ead, Pb	5.0	0.10	1.0
ercury, Hg	0.2	0.00010	N.D.
elenium, Se	1.0	0.10	0.14
ilver, Ag	5.0	0.010	N.D.

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products .O. Box 10047 ortland, OR 97210-0047 ttention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 4 of 4 Matrix: SOLID Analysis Method: EPA 8080 Lab Number: 9410H99-01	Sampled: 10/28/94 Received: 10/28/94 Extracted: 11/02/94 Analyzed: 11/03/94 Reported: 11/03/94

trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/Kg	Sample Results ug/Kg
CB-1016	9600	N.D.
CB-1221	38000	N.D.
CB-1232	9600	N.D.
CB-1242	9600	11000
CB-1248	9600	N.D.
CB-1254	9600	N.D.
CB-1260	9600	N.D.

urrogates	Control Limits %		% Recovery
ibutylchlorendate	30	150	Q

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products O. Box 10047 ortland, OR 97210-0047 tention: Daniel Lee	Client Proj. ID: TCLP (EPA 1311) Sample Descript: Portland 4 of 4 Matrix: SOLID Analysis Method: EPA 8080 Lab Number: 9410H99-01	Sampled: 10/26/94 Received: 10/28/94 Extracted: 11/02/94 Analyzed: 11/03/94 Reported: 11/03/94

: Batch Number: GC110294OPCBEXA
trument ID: GCHP21

Polychlorinated Biphenyls (EPA 8080)

nalyte	Detection Limit ug/L	Sample Results ug/L
CB-1016	10	N.D.
CB-1221	40	N.D.
CB-1232	10	N.D.
CB-1242	10	N.D.
CB-1248	10	N.D.
CB-1254	10	N.D.
CB-1260	10	N.D.

urrogates	Control Limits %		% Recovery
butylchlorendate	50	150	98

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

rgasacchi
ject Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

chnitzer Steel Products	Client Proj. ID: TCLP (EPA 1311)	Sampled: 10/26/94
O. Box 10047	Sample Descript: Portland 4 of 4	Received: 10/28/94
rtland, OR 97210-0047	Matrix: SOLID	
	Analysis Method: EPA6010/7470	Analyzed: 11/01/94
tention: Daniel Lee	Lab Number: 9410H99-01	Reported: 11/03/94

TCLP Metals

nalyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
senic, As	5.0	0.10	N.D.
rium, Ba	100	0.10	1.5
dmium, Cd	1.0	0.010	0.30
hromium, Cr	5.0	0.010	0.064
ad, Pb	5.0	0.10	0.83
ercury, Hg	0.2	0.00010	0.00020
lenium, Se	1.0	0.10	N.D.
lver, Ag	5.0	0.010	N.D.

ytes reported as N.D. were not present above the stated limit of detection.

QUOIA ANALYTICAL - ELAP #1210

gasacchi
Manager

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR; 24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	TCLP-EPA 1311 PCB-EPA 8080	SAMPLE NUMBER
PORTLAND	ASF	1 of 4	BAGS	10-26-94	TCLP		B	RCRA	METALS				REMARKS PLEASE FAX RESULTS	
SUMP	BFI LEACHATE		BTL	3:00PM										
BFI SAMPLER														

*EXTRACTION TEST WITH BFI LANDFILL LEACHATE

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
R. Wiedenhöfe	10/28/94	11:30am	Roy Fatheree
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:

LEACHATE PARAMETERS AT SUMP	
DATE TAKEN FROM SUMP	19
TEMPERATURE	F
pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME:	RECEIVED IN LAB BY:

TRAVEL TIME:		
ON SITE TIME:		
OTHER:		
WERE SAMPLES:	YES	NO
PRESERVED?		
IN GOOD CONDITION?		
BFI TASK		
MONTAGNO TASK		

NOTE: RCP'S FROM EXTRACT REPORTS ONLY

OCT-28-94 FRI 12:12 SCHNITZER STEEL-OAKLAND P.02

SCHN00244070

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	TOTAL
PORTLAND	ASF	2 of 4	BAGS	10-26-94	TCLP		B	RCRA		METALS			
SUMP	BFI LEACHATE		BTL	3:00pm									
BFI SAMPLER													

TCLP-EPA 1311
PCB-EPA 8080

REMARKS: PLEASE FAX RESULTS

SAMPLE NUMBER

*EXTRACTION TEST WITH BFI LANDFILL LEACHATE

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
R. Wiedubne	10/28/94	11:30 AM	Jay Fathman
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:

LEACHATE PARAMETERS AT SUMP

DATE TAKEN FROM SUMP	19
TEMPERATURE	F
pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME:	RECEIVED IN LAB BY:

TRAVEL TIME:
ON SITE TIME:
OTHER:

WERE SAMPLES:	YES	NO
PRESERVED?		
IN GOOD CONDITION?		

BFI TASK
MONTAGINO TASK

*NOTE: PCB'S FROM EXTRACT REPORT SOMEDAY

OCT-28-94 FRI 12:13 SCHNITZER STEEL-OAKLAND P.03

SCHN00244071

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR; 24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED: TCLP - EPA 1311; PCB - EPA 8080

REMARKS: PLEASE FAX RESULTS

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	TOTAL METALS	SAMPLE NUMBER
PORTLAND	ASF	3 of 4	BAGS	10-26-94	TCLP 8 RCRA METALS									
SUMP	BFI LEACHATE		BTL	3:00PM										
BFI SAMPLER														

*EXTRACTION TEST WITH BFI LANDFILL LEACHATE

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	LEACHATE PARAMETERS AT SUMP	
R. Wellbrand	10/28/94	11:30am	[illegible]	DATE TAKEN FROM SUMP	19
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	TEMPERATURE	F
				pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	TRAVEL TIME:	
				ON SITE TIME:	
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	OTHER:	
				WERE SAMPLES:	YES / NO
RELINQUISHED BY:	DATE	TIME:	RECEIVED IN LAB BY:	PRESERVED?	
				IN GOOD CONDITION?	
				BFI TASK	
				MONTAGNO TASK	

** NOTE: PCB'S FROM EXTRACTS REPORTED SEPARATELY

SCHN00244072

SEQUOIA ANALYTICAL

State-Certified Laboratory for Analysis of Water, Soil, and Hazardous Materials

CHAIN OF CUSTODY REPORT

CLIENT:	SCHNITZER STEEL	REPORT TO: DANIEL LEE	TURNAROUND TIME: **pH = 10 DAY; 8 HR; 24 HR; 48 HR [X]; 72 HR; 5 DAY; 10 DAY; 15 DAY
ADDRESS:	PO BOX 10047 PORTLAND, OR 97210-0047	BILLING TO: PORTLAND, OREGON	
PHONE:	503-434-3324 FAX 503-434-5739		
PROJECT NAME/SITE:	PORTLAND FLUFF	PO#/BILLING REFERENCE:	
SAMPLER:	DANIEL LEE	DATE: 10-26-94	

ANALYSIS REQUESTED

SAMPLE ID# STATION	SAMPLE DESCRIPTION	NUMBER OF CONT	TYPE OF CONTAINER	SAMPLING TIME/DATE	* Cd	* Hex Cr	* Cu	* Pb	* Hg	* Ni	* Zn	** pH	TOTAL NO. OF CONTAINERS	REMARKS
PORTLAND	ASF	4 of 4	BAGS	10-26-94	TCLP 8 RCRA METALS									*EXTRACTION TEST WITH BFI LANDFILL LEACHATE
SUMP	BFI LEACHATE		BTL	3:00pm										
BFI SAMPLER														

TCLP - EPA 1311
PCB - EPA 8080
PLEASE FAX RESULTS

SAMPLE NUMBER

PLEASE REFRIGERATE LEACHATE UPON RECEIPT

**pH AND TEMPERATURE AT TIME OF ANALYSIS.

FOR LANDFILL LEACHATE SAMPLE ONLY

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	LEACHATE PARAMETERS AT SUMP	
K. Wickstrom	10/28/94	11:30 am	[signature]	DATE TAKEN FROM SUMP	19
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	TEMPERATURE	F.
				pH	

FOR ASF SAMPLE AND LANDFILL LEACHATE SAMPLE

RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	TRAVEL TIME:
				ON SITE TIME:
RELINQUISHED BY:	DATE	TIME:	RECEIVED BY:	OTHER:
RELINQUISHED BY:	DATE	TIME:	RECEIVED IN LAB BY:	WERE SAMPLES: PRESERVED? IN GOOD CONDITION? (YES / NO)
				BFI TASK
				MONTAGNO TASK

NOTE: FOR STEROMEXTRACT - REPORT ISOMERS

DOC ID: O:\Clom\Port.BRN\OFFSUPP.SEC\Forms\Fax.LOG
Revision #: 1.03
Revision Date: 09/06/94

FACSIMILE TRANSMITTAL LOG

'O: Company Name: Schnitzer Date: 10-3-94

Attention: Daniel Lee

FAX #: (503) 434-5739 Confirmation #: ( )

of Pages (Including Cover Sheets): 8

'ELECOPIER PHONE #: (503) 254-1452 CONFIRMATION PHONE #: (503) 254-1794

S COMMUNICATION CONSISTS OF PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY NAMED ABOVE. IF THE READER OF THIS MESSAGE IS NOT THE INTENDED RECIPIENT, OR THE EMPLOYEE OR AGENT RESPONSIBLE TO DELIVER IT TO THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION OR COPYING OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE IMMEDIATELY NOTIFY US BY TELEPHONE AND RETURN THE ORIGINAL MESSAGE TO US AT THE BELOW ADDRESS VIA THE U.S. POSTAL SERVICE. THANK YOU.

:OMMENTS:

COFFEY LABORATORIES,
12423 N.E.Whitaker Way
Portland, Oregon 97230
Phone: (503) 254-1794
Fax: (503) 254-1452

Marian Nicholson

Report Date: November 3, 1994
Job Number: 941027BG
PO Number: 21625
Project No: None Provided
Project Name: None Provided

Attention: Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 10/27/94 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
941027BG-1	1 ASR	Solid	10/26/94	1500
941027BG-2	2 ASR	Solid	10/26/94	1500
941027BG-3	3 ASR	Solid	10/26/94	1500
941027BG-4	4 ASR	Solid	10/26/94	1500
941027BG-5	Drag Tank Water	Waste Water	10/27/94	1530
941027BG-6	Classifier Water	Waste Water	10/27/94	1530

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.
10420 N.E. Whitaker Way • Portland, OR • 97220 • (503) 254-1794 • FAX (503) 254-1452

COFFEY LABS TEL:15032541452 Nov 03'94 15:20 No.012 P.02

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941027BG

Lab Sample ID: 941027BG-1
Field ID: 1 ASR
Date/Time: 10/26/94 1500
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.3	100
Cadmium	*	0.01	0.50	1.0
Chromium	*	0.01	ND	5.0
Lead	*	0.1	0.5	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.2	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solids, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
34	5.0	1242	mg/Kg
17	5.0	1260	mg/Kg

COFFEY LABORATORIES, INC.
10402 N.E. Whitaker Way • Portland, OR • 97220 • (503) 254-1794 • FAX (503) 254-1452

COFFEY LABS TEL:15032541452 Nov 03,'94 15:20 No.012 P.03

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941027BG

Lab Sample ID: 941027BG-2
Field ID: 2 ASR
Date/Time: 10/26/94 1500
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.2	100
Cadmium	*	0.01	0.61	1.0
Chromium	*	0.01	ND	5.0
Lead	*	0.1	1.5	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.2	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solids, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
32	5.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
10400 N.E. Whitaker Way • Portland, OR • 97220 • (503) 254-1794 • FAX (503) 254-1452

COFFEY LABS TEL:15032541452 Nov 03'94 15:21 No.012 P.04

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941027BG
Page Number: 4 of 7

Lab Sample ID: 941027BG-3
Field ID: 3 ASR
Date/Time: 10/26/94 1500
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.4	100
Cadmium	*	0.01	0.62	1.0
Chromium	*	0.01	ND	5.0
Lead	*	0.1	0.6	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.2	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solids, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
22	5.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12477 N.E. Whitaker Way • Portland OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

COFFEY LABS TEL:15032541452 Nov 03,'94 15:21 No.012 P.05

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941027BG

Lab Sample ID: 941027BG-4
Field ID: 4 ASR
Date/Time: 10/26/94 1500
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.1	100
Cadmium	*	0.01	0.61	1.0
Chromium	*	0.01	ND	5.0
Lead	*	0.1	0.4	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.2	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solids, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
12	5.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12432 N.E. Whitaker Way • Portland OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

COFFEY LABS TEL:15032541452 Nov 03'94 15:21 No.012 P.06

Report Date: November 8, 1994
Job Number: 941102BN
PO Number: 21691
Project No: None Provided
Project Name: None Provided

Attention: Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 11/02/94 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
941102BN-1	#1 ASR East Pile	Solid	[redacted]	1400
941102BN-2	#2 ASR East Pile	Solid	11/02/94	1400
941102BN-3	#3 ASR East Pile	Solid	11/02/94	1400
941102BN-4	#4 ASR East Pile	Solid	11/02/94	1400

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941102BN
Page Number: 2 of 5

Lab Sample ID: 941102BN-1
Field ID: #1 ASR East Pile
Date/Time: 11/02/94 1400
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.5	100
Cadmium	*	0.02	0.76	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	2.4	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
17	8.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941102BN
Page Number: 3 of 5

Lab Sample ID: 941102BN-2
Field ID: #2 ASR East Pile
Date/Time: 11/02/94 1400
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.7	100
Cadmium	*	0.02	0.71	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	2.0	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
18	8.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941102BN
Page Number: 4 of 5

Lab Sample ID: 941102BN-3
Field ID: #3 ASR East Pile
Date/Time: 11/02/94 1400
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.5	100
Cadmium	*	0.02	0.71	1.0
Chromium	*	0.02	0.02	5.0
Lead	*	0.1	2.6	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
15	8.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941102BN
Page Number: 5 of 5

Lab Sample ID: 941102BN-4
Field ID: #4 ASR East Pile
Date/Time: 11/02/94 1400
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.6	100
Cadmium	*	0.02	0.69	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	1.4	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
15	8.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Report Date: November 8, 1994
Job Number: 941103W
PO Number: 21691
Project No: None Provided
Project Name: None Provided

Attention: Daniel Lee / Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 11/03/94 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
941103W-1	#1 ASR West Pile	Solid	11/02/94	1300
941103W-2	#2 ASR West Pile	Solid	11/02/94	1300
941103W-3	#3 ASR West Pile	Solid	11/02/94	1300
941103W-4	#4 ASR West Pile	Solid	11/02/94	1300
941103W-5	#1 ASR Contemporaneous	Solid	11/02/94	comp
941103W-6	#2 ASR Contemporaneous	Solid	11/02/94	comp
941103W-7	#3 ASR Contemporaneous	Solid	11/02/94	comp
941103W-8	#4 ASR Contemporaneous	Solid	11/02/94	comp

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Job Number: 941103W

Analytical Narrative (continued)

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 3 of 10

Lab Sample ID: 941103W-1
Field ID: #1 ASR West Pile
Date/Time: 11/02/94 1300
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.7	100
Cadmium	*	0.02	0.63	1.0
Chromium	*	0.02	0.03	5.0
Lead	*	0.1	10	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
33	7.0	1242	mg/Kg
18	7.0	1254	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 4 of 10

Lab Sample ID: 941103W-2
Field ID: #2 ASR West Pile
Date/Time: 11/02/94 1300
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.7	100
Cadmium	*	0.02	0.66	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	6.6	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
38	7.0	1242	mg/Kg
18	7.0	1254	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 5 of 10

Lab Sample ID: 941103W-3
Field ID: #3 ASR West Pile
Date/Time: 11/02/94 1300
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.4	100
Cadmium	*	0.02	0.57	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	2.1	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
36	7.0	1242	mg/Kg
28	7.0	1254	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 6 of 10

Lab Sample ID: 941103W-4
Field ID: #4 ASR West Pile
Date/Time: 11/02/94 1300
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	1.7	100
Cadmium	*	0.02	0.64	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	2.8	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
37	7.0	1242	mg/Kg
16	7.0	1254	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 7 of 10

Lab Sample ID: 941103W-5
Field ID: #1 ASR Contemporaneous
Date/Time: 11/02/94 comp
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	0.19	100
Cadmium	*	0.02	0.48	1.0
Chromium	*	0.02	ND	5.0
Lead	*	0.1	1.0	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
13	7.0	1242	mg/Kg
7	7.0	1254	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 8 of 10

Lab Sample ID: 941103W-6
Field ID: #2 ASR Contemporaneous
Date/Time: 11/02/94 comp
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	0.14	100
Cadmium	*	0.02	0.34	1.0
Chromium	*	0.02	0.04	5.0
Lead	*	0.1	0.7	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
14	7.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc

Job Number: 941103W
Page Number: 9 of 10

Lab Sample ID: 941103W-7
Field ID: #3 ASR Contemporaneous
Date/Time: 11/02/94 comp
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit
Arsenic	*	0.1	ND	5.0
Barium	*	0.01	0.19	100
Cadmium	*	0.02	0.36	1.0
Chromium	*	0.02	0.04	5.0
Lead	*	0.1	1.0	5.0
Mercury	*, 7470	0.05	ND	0.2
Selenium	*	0.2	ND	1.0
Silver	*	0.1	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
17	7.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941103W
Page Number: 10 of 10

Lab Sample ID: 941103W-8
Field ID: #4 ASR Contemporaneous
Date/Time: 11/02/94 comp
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	Extraction Duplicate	EPA Limit
Arsenic	*	0.1	ND	ND	5.0
Barium	*	0.01	0.22	0.16	100
Cadmium	*	0.02	0.33	0.40	1.0
Chromium	*	0.02	0.05	0.03	5.0
Lead	*	0.1	1.3	1.2	5.0
Mercury	*, 7470	0.05	ND	—	0.2
Selenium	*	0.2	ND	ND	1.0
Silver	*	0.1	ND	ND	5.0

Results are reported in milligrams per liter (mg/L).

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in sludge, by Modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
13	7.0	1242	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.U.36-0144 FAX 503/323-8793

November 11, 1994

Mr. Bruce Clabaugh, M.S., R.S.
Environmental Compliance Manager
Waste Management, Inc.
2400 W. Union Ave.
Englewood, CO 80110

SENT VIA FACSIMILE: (303)-797-6907

RE: Shredder Residue

Dear Mr. Clabaugh:

This is to follow-up our letter of October 20, 1994 sent to Mr. Doug Coenen of Oregon Waste Systems, Inc. (OWS) and our meeting of November 7, 1994, discussing sampling protocols, sampling results, operational procedures, gate policies and other information concerning shredder residue.

As you know, proper sampling protocols and accurate characterization of shredder residue are both important and essential to obtaining representative samples and a complete understanding of the physical and chemical constituencies of the material. Shredder residue is not homogeneous in nature, and proper time weighted volume sampling needs to occur, in order to assure representative samples are obtained and analyzed.

As part of our follow-up to monitoring and sampling tasks performed at our Portland facility, during September 1994, we felt that the samples taken were improperly taken and consequently the lab results would present information <u>not</u> representative of the material being accepted by OWS. Specifically, the sampler described that the sampling performed at that single event excluded the larger pieces of residue, such as fabric, plastic, foam and rubber. These materials may represent up to 50% of the weight of shredder residue and consequently, the sample actually taken constituted only the "fines", which are not by themselves representative of the material being accepted.

Although we did not believe the material sent at that time was hazardous, we felt it prudent to conduct additional samples, following well recognized sampling protocols, before this material or additional materials were received by your Arlington facility.

Since that time, we have conducted a series of additional samples, using time weighted volume sampling measurements, sending split samples to a recognized laboratory in California and to a Portland laboratory. We did this to avoid any confusion or uncertainty about the variability of results between labs -- and the results in fact demonstrated similar results and findings.

Specifically, we took time weighted volume samples on October 24 and 26, 1994, directly off the shredder process and we took samples from the shredder residue that had been accumulated since our letter to you of October 1994, when we ceased sending material to you pending this additional evaluation of the material. The results of these various sample events were provided to you, in preliminary form, at our November 7, 1994 meeting. As soon as the full QA/QC reports are available to us from the labs, we will forward these reports to you. The bottom line, however, is that the lab results for lead and PCBs were at levels well below levels of regulatory concern and verified our view that the shredder residue material that had been sent to you, as well as that being produced since our October 1994 letter, was all non-hazardous.

For your information, attached are copies of the lab results that provide you historical information regarding the non-hazardous nature of this material (March 1993, April 1993, September 1993, March 1994, August 1994) as well as the results from this most recent round of sampling (October 24, 1994; October 26, 1994 and November 3, 1994). Also attached is a summary of the sampling protocols we are following in taking samples, which is consistent with the sampling protocols utilized by numerous other companies in the shredder industry.

Consistent with our discussion of November 7, 1994, Schnitzer will conduct monthly samples for its shredder residue for October, November and December 1994. We will inform Ms. Melinda J. Gillcrist of the exact dates and invite her attendance during the sampling activities. Our understanding is that assuming the results form these three monthly samples demonstrates no significant deviations or exceedances from the above referenced lab results that Schnitzer will subsequently conduct quarterly sampling. Further, it is understood that after one year's of information this frequency will be reduced to once per year if the resulting data indicate consistency with the historical data.

As we also discussed at our meeting, Schnitzer does have a very detailed and rigorous program of enforcing its "gate policy" of what is acceptable and <u>not</u> acceptable scrap material (copy attached). This includes signage at the gate, distribution of printed flyers of the gate policy to all suppliers and peddlers, periodic meeting by Schnitzer personnel with key large accounts and customers regarding compliance with the gate policy, and aggressive inspection programs of scrap by Schnitzer personnel before material

is processed. Schnitzer has been a leader in adopting strict gate policies on acceptable scrap materials, before regulatory mandates -- and we believe the combination of the above activities are specific reasons why our shredder residue materials are non-hazardous.

We appreciate your taking the time to travel to Portland, and to become acquainted with the Schnitzer staff and fully briefed on our practices and operations. Please let me know if we can provide you with further information or provide other assistance regarding our shredder residue or Schnitzer.

Sincerely,

SCHNITZER STEEL INDUSTRIES, INC.

Daniel Lee
Environmental Specialist

Attachments (9)

TZ:dr

cc: Mr. Doug Coenen, OWS
Mr. Ken Irish, OWS
Ms. Joyce Johnson, OWS
Ms. Melinda J. Gillcrist, WMX
Mr. Terry Glucoft, SSP

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.U.36-0144 FAX 503/323-2793

January 19, 1995

Ms. Melinda Gillcrist
Waste Management of North America, Inc.
4020 Lake Washington BLVD NE
Suite 310
Kirkland, WA 98033

SENT VIA FACSIMILE: (206) 828-2433

Dear Melinda:

Enclosed are reports of shredder residue sample analytical results. Samplings were conducted on Dec. 21, 1994 and Jan. 6, 1995. Total of sixteen samples were prepared and tested. Following is a summary table of the sampling results:

Date	Sample ID	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs
12/21/94	AA1	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
	AA 2	ND	1.2	0.49	0.02	12	ND	ND	ND	12
	AA 3	ND	1.2	0.43	ND	3.8	ND	ND	ND	18
	AA 4	ND	1.2	0.36	ND	1.4	ND	ND	ND	19
	X 1	ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
	X 2	ND	1.3	0.53	0.05	17	ND	ND	ND	19
	X 3	ND	1.3	5.82 *	0.02	5.8 *	ND	ND	ND	15
	X 4	ND	1	0.37	0.02	4.2	ND	ND	ND	19
1/6/95	AT 1			0.56		0.65				
	AT 2			0.5		1.6				
	AT 3			0.5		0.86				
	AT 4			0.6		1.6				
	AS 1			0.46		0.74				
	AS 2			0.63		0.64				
	AS 3			0.74		0.92				
	AS4			0.5		1.3				
	Average	0	1.2	0.8425	0.023	4.0194	0	0	0	17.88

* Average is used

The average lead and cadmium leachate concentration in the fluff were 4.0 ppm and 0.84 ppm, respectively, which are lower than EPA's limits. Differences in the analytical

results on each sample are related to the heterogeneity of the residue.

Should you have any questions or need further information, please contact me at (503) 434-3324.

Sincerely,

Daniel Lee

Daniel Lee
Environmental Specialist

Report Date: January 5, 1995
Job Number: 941221AA
PO Number: 22158
Project No: None Provided
Project Name: Shredder Fluff

Attention: Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 12/21/94 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
941221AA-1	ASR #1	Solid	12/20/94	NP
941221AA-2	ASR #2	Solid	12/20/94	NP
941221AA-3	ASR #3	Solid	12/20/94	NP
941221AA-4	ASR #4	Solid	12/20/94	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 2 of 5

Lab Sample ID: 941221AA-1
Field ID: ASR #1
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.50	1.0	mg/L
Chromium	*	0.02	0.03	5.0	mg/L
Lead	*	0.1	6.2	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
25	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 3 of 5

Lab Sample ID: 941221AA-2
Field ID: ASR #2
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.49	1.0	mg/L
Chromium	*	0.02	0.02	5.0	mg/L
Lead	*	0.1	12	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
12	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 4 of 5

Lab Sample ID: 941221AA-3
Field ID: ASR #3
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.43	1.0	mg/L
Chromium	*	0.02	ND	5.0	mg/L
Lead	*	0.1	3.8	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
18	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 5 of 5

Lab Sample ID: 941221AA-4
Field ID: ASR #4
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.36	1.0	mg/L
Chromium	*	0.02	ND	5.0	mg/L
Lead	*	0.1	1.4	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
19	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Report Date: January 11, 1995
Job Number: 950104X
PO Number: 22231
Project No: None Provided
Project Name: ASR Dec 95

Attention: Keith Lawson / Daniel Lee
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

(Duplicates of 12/21/94 samples)

The samples were received on [redacted] by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950104X-1	ASR #5	Solid	12/20/94	NP
950104X-2	ASR #6	Solid	12/20/94	NP
950104X-3	ASR #7	Solid	12/20/94	NP
950104X-4	ASR #8	Solid	12/20/94	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 2 of 5

Lab Sample ID: 950104X-1
Field ID: ASR #5
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.49	1.0	mg/L
Chromium	*	0.02	0.04	5.0	mg/L
Lead	*	0.1	5.6	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

ND means none detected at or above the detection limit listed.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
16	1242	3.0	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 3 of 5

Lab Sample ID: 950104X-2
Field ID: ASR #6
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.3	100	mg/L
Cadmium	*	0.02	0.53	1.0	mg/L
Chromium	*	0.02	0.05	5.0	mg/L
Lead	*	0.1	17	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

ND means none detected at or above the detection limit listed.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
19	1242	3.0	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 4 of 5

Lab Sample ID: 950104X-3
Field ID: ASR #7
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	01/05/95** Sample Results	Retest 01/16/95** Sample Results	EPA Limit	Units	AVG.
Arsenic	*	0.1	ND	ND	5.0	mg/L	
Barium	*	0.01	1.3	1.1	100	mg/L	
Cadmium	*	0.02	11	0.64	1.0	mg/L	5.82
Chromium	*	0.02	0.02	ND	5.0	mg/L	
Lead	*	0.1	3.4	8.2	5.0	mg/L	5.8
Mercury	*, 7470	0.05	ND	—	0.2	mg/L	
Selenium	*	0.2	ND	ND	1.0	mg/L	
Silver	*	0.1	ND	ND	5.0	mg/L	

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

** Sample results represent the analytical results related to the sub-sample that was prepared and analyzed on the date reported above. Differences in the analytical results are related to the lack of homogeneity of the sample provided by the client.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
15	1242	3.0	mg/Kg

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 5 of 5

Lab Sample ID: 950104X-4
Field ID: ASR #8
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.0	100	mg/L
Cadmium	*	0.02	0.37	1.0	mg/L
Chromium	*	0.02	0.02	5.0	mg/L
Lead	*	0.1	4.2	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

*Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

ND means none detected at or above the detection limit listed.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
19	1242	3.0	mg/Kg

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.U.36-0144 FAX 503/323-2793

January 19, 1995

Ms. Melinda Gillcrist
Waste Management of North America, Inc.
4020 Lake Washington BLVD NE
Suite 310
Kirkland, WA 98033

SENT VIA FACSIMILE: (206) 828-2433

Dear Melinda:

Enclosed are reports of shredder residue sample analytical results. Samplings were conducted on Dec. 21, 1994 and Jan. 6, 1995. Total of sixteen samples were prepared and tested. Following is a summary table of the sampling results:

Date	Sample ID	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs
12/21/94	AA1	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
	AA 2	ND	1.2	0.49	0.02	12	ND	ND	ND	12
	AA 3	ND	1.2	0.43	ND	3.8	ND	ND	ND	18
	AA 4	ND	1.2	0.36	ND	1.4	ND	ND	ND	19
	X 1	ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
	X 2	ND	1.3	0.53	0.05	17	ND	ND	ND	19
	X 3	ND	1.3	5.82 *	0.02	5.8 *	ND	ND	ND	15
	X 4	ND	1	0.37	0.02	4.2	ND	ND	ND	19
1/6/95	AT 1			0.56		0.65				
	AT 2			0.5		1.6				
	AT 3			0.5		0.86				
	AT 4			0.6		1.6				
	AS 1			0.46		0.74				
	AS 2			0.63		0.64				
	AS 3			0.74		0.92				
	AS4			0.5		1.3				
	Average	0	1.2	0.8425	0.023	4.0194	0	0	0	17.88

* Average is used

The average lead and cadmium leachate concentration in the fluff were 4.0 ppm and 0.84 ppm, respectively, which are lower than EPA's limits. Differences in the analytical

results on each sample are related to the heterogeneity of the residue.

Should you have any questions or need further information, please contact me at (503) 434-3324.

Sincerely,

Daniel Lee

Daniel Lee
Environmental Specialist

Report Date: January 5, 1995
Job Number: 941221AA
PO Number: 22158
Project No: None Provided
Project Name: Shredder Fluff

Attention: Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 12/21/94 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
941221AA-1	ASR #1	Solid	12/20/94	NP
941221AA-2	ASR #2	Solid	12/20/94	NP
941221AA-3	ASR #3	Solid	12/20/94	NP
941221AA-4	ASR #4	Solid	12/20/94	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 2 of 5

Lab Sample ID: 941221AA-1
Field ID: ASR #1
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.50	1.0	mg/L
Chromium	*	0.02	0.03	5.0	mg/L
Lead	*	0.1	6.2	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
25	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 3 of 5

Lab Sample ID: 941221AA-2
Field ID: ASR #2
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.49	1.0	mg/L
Chromium	*	0.02	0.02	5.0	mg/L
Lead	*	0.1	12	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
12	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 4 of 5

Lab Sample ID: 941221AA-3
Field ID: ASR #3
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.43	1.0	mg/L
Chromium	*	0.02	ND	5.0	mg/L
Lead	*	0.1	3.8	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
18	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 941221AA
Page Number: 5 of 5

Lab Sample ID: 941221AA-4
Field ID: ASR #4
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.36	1.0	mg/L
Chromium	*	0.02	ND	5.0	mg/L
Lead	*	0.1	1.4	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analysis Performed: Polychlorinated Biphenyls (PCBs) in solid by modified EPA Method 8080, GC/ECD.

Sample Results	Detection Limit	Aroclor	Units
19	2.0	1242	mg/Kg

ND means none detected at or above the detection limit listed.

Report Date: January 11, 1995
Job Number: 950104X
PO Number: 22231
Project No: None Provided
Project Name: ASR Dec 95

Attention: Keith Lawson / Daniel Lee
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

(Duplicates of 12/21/94 samples)

The samples were received on 01/04/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950104X-1	ASR #5	Solid	12/20/94	NP
950104X-2	ASR #6	Solid	12/20/94	NP
950104X-3	ASR #7	Solid	12/20/94	NP
950104X-4	ASR #8	Solid	12/20/94	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 2 of 5

Lab Sample ID: 950104X-1
Field ID: ASR #5
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.2	100	mg/L
Cadmium	*	0.02	0.49	1.0	mg/L
Chromium	*	0.02	0.04	5.0	mg/L
Lead	*	0.1	5.6	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

ND means none detected at or above the detection limit listed.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
16	1242	3.0	mg/Kg

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 3 of 5

Lab Sample ID: 950104X-2
Field ID: ASR #6
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.3	100	mg/L
Cadmium	*	0.02	0.53	1.0	mg/L
Chromium	*	0.02	0.05	5.0	mg/L
Lead	*	0.1	17	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

ND means none detected at or above the detection limit listed.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
19	1242	3.0	mg/Kg

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 4 of 5

Lab Sample ID: 950104X-3
Field ID: ASR #7
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	01/05/95** Sample Results	Retest 01/16/95** Sample Results	EPA Limit	Units	AVG.
Arsenic	*	0.1	ND	ND	5.0	mg/L	
Barium	*	0.01	1.3	1.1	100	mg/L	
Cadmium	*	0.02	11	0.64	1.0	mg/L	5.82
Chromium	*	0.02	0.02	ND	5.0	mg/L	
Lead	*	0.1	3.4	8.2	5.0	mg/L	5.8
Mercury	*, 7470	0.05	ND	—	0.2	mg/L	
Selenium	*	0.2	ND	ND	1.0	mg/L	
Silver	*	0.1	ND	ND	5.0	mg/L	

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

** Sample results represent the analytical results related to the sub-sample that was prepared and analyzed on the date reported above. Differences in the analytical results are related to the lack of homogeneity of the sample provided by the client.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
15	1242	3.0	mg/Kg

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950104X
Page Number: 5 of 5

Lab Sample ID: 950104X-4
Field ID: ASR #8
Date/Time: 12/20/94
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.01	1.0	100	mg/L
Cadmium	*	0.02	0.37	1.0	mg/L
Chromium	*	0.02	0.02	5.0	mg/L
Lead	*	0.1	4.2	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

ND means none detected at or above the detection limit listed.

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD.

PCB	Aroclor	Detection Limit	Units
19	1242	3.0	mg/Kg

COFFEY LABORATORIES, INC.

Report Date: January 12, 1995
Job Number: 950106AT
PO Number: 22258
Project No: 1-4
Project Name: ASR 1-5-95

Attention: Keith Lawson
Schnitzer Steel Industries, Inc.
12005 N. Burgard Rd.
Portland, OR 97203

Analytical Narrative

The samples were received on 01/06/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950106AT-1	ASR #1	Solid	01/05/95	NP
950106AT-2	ASR #2	Solid	01/05/95	NP
950106AT-3	ASR #3	Solid	01/05/95	NP
950106AT-4	ASR #4	Solid	01/05/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 2 of 5

Lab Sample ID: 950106AT-1
Field ID: ASR #1
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.57	1.0	mg/L
Lead	*	0.1	0.7	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
10403 N.E. Whitaker Way • Portland, OR • 97220 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 3 of 5

Lab Sample ID: 950106AT-2
Field ID: ASR #2
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.51	1.0	mg/L
Lead	*	0.1	1.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12402 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 4 of 5

Lab Sample ID: 950106AT-3
Field ID: ASR #3
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.51	1.0	mg/L
Lead	*	0.1	0.9	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 5 of 5

Lab Sample ID: 950106AT-4
Field ID: ASR #4
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.60	1.0	mg/L
Lead	*	0.1	1.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Report Date: January 12, 1995
Job Number: 950106AS
PO Number: 22259
Project No: 5-8
Project Name: ASR 1-5-95

Attention: Keith Lawson
Schnitzer Steel Industries, Inc.
12005 N. Burgard Rd.
Portland, OR 97203

Analytical Narrative

The samples were received on 01/06/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950106AS-1	ASR #5	Solid	01/05/95	NP
950106AS-2	ASR #6	Solid	01/05/95	NP
950106AS-3	ASR #7	Solid	01/05/95	NP
950106AS-4	ASR #8	Solid	01/05/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.
12422 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 2 of 5

Lab Sample ID: 950106AS-1
Field ID: ASR #5
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.46	1.0	mg/L
Lead	*	0.1	0.7	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 3 of 5

Lab Sample ID: 950106AS-2
Field ID: ASR #6
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.64	1.0	mg/L
Lead	*	0.1	0.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 4 of 5

Lab Sample ID: 950106AS-3
Field ID: ASR #7
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.74	1.0	mg/L
Lead	*	0.1	0.9	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 5 of 5

Lab Sample ID: 950106AS-4
Field ID: ASR #8
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.50	1.0	mg/L
Lead	*	0.1	1.3	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Report Date: January 12, 1995
Job Number: 950106AT
PO Number: 22258
Project No: 1-4
Project Name: ASR 1-5-95

Attention: Keith Lawson
Schnitzer Steel Industries, Inc.
12005 N. Burgard Rd.
Portland, OR 97203

Analytical Narrative

The samples were received on [redacted] Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950106AT-1	ASR #1	Solid	01/05/95	NP
950106AT-2	ASR #2	Solid	01/05/95	NP
950106AT-3	ASR #3	Solid	01/05/95	NP
950106AT-4	ASR #4	Solid	01/05/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 2 of 5

Lab Sample ID: 950106AT-1
Field ID: ASR #1
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.57	1.0	mg/L
Lead	*	0.1	0.7	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 3 of 5

Lab Sample ID: 950106AT-2
Field ID: ASR #2
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.51	1.0	mg/L
Lead	*	0.1	1.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 4 of 5

Lab Sample ID: 950106AT-3
Field ID: ASR #3
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.51	1.0	mg/L
Lead	*	0.1	0.9	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AT
Page Number: 5 of 5

Lab Sample ID: 950106AT-4
Field ID: ASR #4
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.60	1.0	mg/L
Lead	*	0.1	1.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.

Report Date: January 12, 1995
Job Number: 950106AS
PO Number: 22259
Project No: 5-8
Project Name: ASR 1-5-95

Attention: Keith Lawson
Schnitzer Steel Industries, Inc.
12005 N. Burgard Rd.
Portland, OR 97203

Analytical Narrative

The samples were received on [redacted] by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950106AS-1	ASR #5	Solid	01/05/95	NP
950106AS-2	ASR #6	Solid	01/05/95	NP
950106AS-3	ASR #7	Solid	01/05/95	NP
950106AS-4	ASR #8	Solid	01/05/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 2 of 5

Lab Sample ID: 950106AS-1
Field ID: ASR #5
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.46	1.0	mg/L
Lead	*	0.1	0.7	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 3 of 5

Lab Sample ID: 950106AS-2
Field ID: ASR #6
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.64	1.0	mg/L
Lead	*	0.1	0.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 4 of 5

Lab Sample ID: 950106AS-3
Field ID: ASR #7
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.74	1.0	mg/L
Lead	*	0.1	0.9	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries, Inc.

Job Number: 950106AS
Page Number: 5 of 5

Lab Sample ID: 950106AS-4
Field ID: ASR #8
Date/Time: 01/05/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Sample Results	EPA Limit	Units
Cadmium	*	0.01	0.50	1.0	mg/L
Lead	*	0.1	1.3	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
[illegible] Telex/[illegible] FAX 503/[illegible]

February 27, 1995

Ms. Andrea Christman
Waste Management of North America, Inc.
4020 Lake Washington BLVD NE
Suite 310
Kirkland, WA 98033

Dear Ms. Christman:

Enclosed is a report of shredder residue sample analytical results. Sampling was conducted on Feb. 8, 1995. Following is a summary table of the sampling results:

Fluff test analysis

Date	Sample ID	Cd (mg/l)	Pb (mg/l)
2/8/95	ASR1	0.37	1.6
	ASR2	0.44	2.5
	ASR3	0.52	1.2
	ASR4	0.43	2.2
	ASR5	0.33	2.8
	ASR6	0.38	2
	ASR7	0.33	3.7
	ASR8	0.48	2.9

Should you have any questions or need further information, please contact either Daniel Lee at (503) 434-3324 or me at (503)286-5771.

Sincerely,

Terry Glucose
General Manager

cc: Ken Irish, CWS
Daniel Lee, SSP

Cascade steel rolling mills, inc.

P.O. Box 687
3200 North Highway 99W
McMinnville, Oregon 97128-9399

(503) 472-4181 Portland 222-6824
TWX 910-452-7011 Telefax (503) 434-5739

FACSIMILE TELECOPY TRANSMISSION

503/434-5739

COMPANY TO: SSP

FAX NO : 286-6948

ATTENTION : Terry Glucoft

FROM : Daniel Lu

DATE : 2/27/95

This set consists of 11 pages including cover page.

==========

MESSAGE

Enclosed is a report of Fluff test for month of Feb.
pls fax the report to Ken Irish, OWS at (503) 281-1697 upon your approval, or fax it back to me.

Questions Re the report or testings pls give me a call at Ext. 3324
Hard copies of the results will be in the mail THX. Daniel

***If you do not receive this transmission in its entirety, or if you have received this transmission in error, please call us immediately at 503/472-4181. This transmission may include confidential information and is intended only for the individual or entity named above. Any person other than the intended recipient (or others authorized by the intended recipient) is prohibited from reading, copying, or distributing this transmission.

CRSI

Report Date: February 17, 1995
Job Number: 950210AS
PO Number: 22640
Project No: 2-8-95 Sample
Project Name: 1-8 ASR

Attention: Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 02/10/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950210AS-1	ASR #1	Solid	02/08/95	NP
950210AS-2	ASR #2	Solid	02/08/95	NP
950210AS-3	ASR #3	Solid	02/08/95	NP
950210AS-4	ASR #4	Solid	02/08/95	NP
950210AS-5	ASR #5	Solid	02/08/95	NP
950210AS-6	ASR #6	Solid	02/08/95	NP
950210AS-7	ASR #7	Solid	02/08/95	NP
950210AS-8	ASR #8	Solid	02/08/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 2 of 9

Lab Sample ID: 950210AS-1
Field ID: ASR #1
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.37	1.0	mg/L
Lead	*	0.1	1.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 3 of 9

Lab Sample ID: 950210AS-2
Field ID: ASR #2
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.44	1.0	mg/L
Lead	*	0.1	2.5	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 4 of 9

Lab Sample ID: 950210AS-3
Field ID: ASR #3
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.52	1.0	mg/L
Lead	*	0.1	1.2	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 5 of 9

Lab Sample ID: 950210AS-4
Field ID: ASR #4
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.43	1.0	mg/L
Lead	*	0.1	2.2	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 6 of 9

Lab Sample ID: 950210AS-5
Field ID: ASR #5
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.33	1.0	mg/L
Lead	*	0.1	2.8	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 7 of 9

Lab Sample ID: 950210AS-6
Field ID: ASR #6
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.38	1.0	mg/L
Lead	*	0.1	2.0	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 8 of 9

Lab Sample ID: 950210AS-7
Field ID: ASR #7
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.33	1.0	mg/L
Lead	*	0.1	3.7	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 9 of 9

Lab Sample ID: 950210AS-8
Field ID: ASR #8
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.48	1.0	mg/L
Lead	*	0.1	2.9	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

****
*** ACTIVITY MANAGEMENT REPORT TX ***
****

ACTY#	MODE		CONNECTION TEL	CONNECTION ID	START TIME	USAGE T.	PAGES	RESULT
8734	TX	G3	912088881188		02/27 11:34	01'14	2	OK
8735	TX	G3	912064740714		02/27 11:36	01'04	2	OK
8736	TX	G3	919075612935		02/27 11:38	01'06	2	OK
8740	TX	G3	915094535629	BMDD YAKIMA WA	02/27 11:43	00'44	2	OK
8741	TX	G3	916538934		02/27 11:44	01'03	2	OK
8742	TX	G3	915095365415		02/27 11:46	01'01	2	OK
8744	TX	G3	916616552		02/27 11:49	01'01	2	OK
8737	TX	G3	912083451517	BMD BOISE CASCAD	02/27 11:51	01'06	1	OK
8738	TX	G3	915099220599	BCC-BMDD-SPK	02/27 12:05	00'45	2	OK
8743	TX	G3	912067362868		02/27 12:08	01'05	2	OK
8739	TX		912066689333		02/27 12:09	00'00	0	NG
								0 #018
8746	TX	G3	916724766		02/27 12:11	01'05	2	OK
8747	TX	G3	912065889405		02/27 12:12	00'51	2	OK
8748	TX	G3	915036833242	FARWEST PURCH	02/27 12:14	00'45	2	OK
8749	TX	G3	912066990553	GENERAL	02/27 12:15	01'03	2	OK
8750	TX	G3	915262954		02/27 12:17	00'52	2	OK
8751	TX	G3	914062456740		02/27 12:19	01'03	2	OK
8752	TX	G3	6948	SCHNITZER STEEL	02/27 12:31	04'06	11	OK
8753	TX	G3	3219		02/27 12:56	00'33	1	OK
8754	TX	G3	3333		02/27 13:03	00'32	1	OK
8755	TX	G3	915104870780	CSRM UC	02/27 13:06	00'35	1	OK
8756	TX	G3	912287475		02/27 13:08	00'34	1	OK
8757	TX	G3	912083427281	GP BOE	02/27 13:20	00'52	2	OK
8758	TX	G3	915033428250	GP EU	02/27 13:21	00'52	2	OK
8759	TX	G3	912092513514	GP FRES	02/27 13:23	01'04	2	OK
8760	TX	G3	918187037922	GP SF	02/27 13:25	01'03	2	OK
8761	TX	G3	918183332942	GP LOS	02/27 13:26	01'02	2	OK
8762	TX	G3	916194743669	GP NATCTY	02/27 13:28	01'02	2	OK
8763	TX	G3	915108958130	GP OAK	02/27 13:30	00'52	2	OK
8764	TX	G3	916029340199		02/27 13:31	01'03	2	OK
8765	TX	G3	919096827992	GP RIV	02/27 13:33	00'58	2	OK
8767	TX	G3	918014854979		02/27 13:36	00'50	2	OK
8768	TX	G3	914082948382	GP SJ	02/27 13:37	01'03	2	OK
8769	TX	G3	917075861932	GP SR	02/27 13:39	01'03	2	OK
8770	TX	G3	915099249801	GP SPO	02/27 13:41	01'03	2	OK
8771	TX	G3	912064852642		02/27 13:43	01'02	2	OK
8772	TX	G3	915104870780	CSRM UC	02/27 13:44	00'33	1	OK
8775	TX	G3	912068231590	GRAHAM	02/27 13:53	01'18	1	NG
								1 ##102

****
*** ACTIVITY MANAGEMENT REPORT RX ***
****

ACTY#	MODE		CONNECTION TEL	CONNECTION ID	START TIME	USAGE T.	PAGES	RESULT
8745	AUTO RX	G3			02/27 12:02	00'52	1	OK
8773	AUTO RX	G3	209 4860575		02/27 13:47	00'32	1	OK

cascade steel rolling mills, inc.

P.O. Box 687
3200 North Highway 99W
McMinnville, Oregon 97128-9399

(503) 472-4181 Portland 222-6824
TWX 910-452-7011 Telefax (503) 434-5739

FACSIMILE TELECOPY TRANSMISSION

503/434-5739

COMPANY TO: SSP

FAX NO : 286-6948

ATTENTION : Terry Glucoft

FROM : Daniel Lee

DATE : 2/27/95

This set consists of 11 pages including cover page.

==========

MESSAGE

Enclosed is a report of Fluff test for month of Feb.
pls fax the report to Ken Irish, OWS at (503) 281-1697 upon your approval, or fax it back to me.

Questions Re the report or testings pls give me a call at Ext. 3324
Hard copies of the results will be in the mail THX. Daniel

***If you do not receive this transmission in its entirety, or if you have received this transmission in error, please call us immediately at 503/472-4181. This transmission may include confidential information and is intended only for the individual or entity named above. Any person other than the intended recipient (or others authorized by the intended recipient) is prohibited from reading, copying, or distributing this transmission.

CRSI

Report Date: February 17, 1995
Job Number: 950210AS
PO Number: 22640
Project No: 2-8-95 Sample
Project Name: 1-8 ASR

Attention: Keith Lawson
Schnitzer Steel Industries,Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The samples were received on 02/10/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950210AS-1	ASR #1	Solid	02/08/95	NP
950210AS-2	ASR #2	Solid	02/08/95	NP
950210AS-3	ASR #3	Solid	02/08/95	NP
950210AS-4	ASR #4	Solid	02/08/95	NP
950210AS-5	ASR #5	Solid	02/08/95	NP
950210AS-6	ASR #6	Solid	02/08/95	NP
950210AS-7	ASR #7	Solid	02/08/95	NP
950210AS-8	ASR #8	Solid	02/08/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 2 of 9

Lab Sample ID: 950210AS-1
Field ID: ASR #1
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.37	1.0	mg/L
Lead	*	0.1	1.6	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 3 of 9

Lab Sample ID: 950210AS-2
Field ID: ASR #2
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.44	1.0	mg/L
Lead	*	0.1	2.5	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 4 of 9

Lab Sample ID: 950210AS-3
Field ID: ASR #3
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.52	1.0	mg/L
Lead	*	0.1	1.2	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 5 of 9

Lab Sample ID: 950210AS-4
Field ID: ASR #4
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.43	1.0	mg/L
Lead	*	0.1	2.2	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 6 of 9

Lab Sample ID: 950210AS-5
Field ID: ASR #5
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.33	1.0	mg/L
Lead	*	0.1	2.8	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 7 of 9

Lab Sample ID: 950210AS-6
Field ID: ASR #6
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.38	1.0	mg/L
Lead	*	0.1	2.0	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 8 of 9

Lab Sample ID: 950210AS-7
Field ID: ASR #7
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.33	1.0	mg/L
Lead	*	0.1	3.7	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950210AS
Page Number: 9 of 9

Lab Sample ID: 950210AS-8
Field ID: ASR #8
Date/Time: 02/08/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Cadmium	*	0.02	0.48	1.0	mg/L
Lead	*	0.1	2.9	5.0	mg/L

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

cascade steel rolling mills, inc.

P.O. Box 687
3200 North Highway 99W
McMinnville, Oregon 97128-9399

(503) 472-4181 Portland 222-6824
TWX 910-452-7011 Telefax (503) 434-5739

FACSIMILE TELECOPY TRANSMISSION

503/434-5739

COMPANY TO: Waste MGMT

FAX NO : (303) 797 - 9504

ATTENTION : Bruce Clabaugh

FROM : Daniel Lee

DATE : 4/12/95

This set consists of _____ pages including cover page.

==========

MESSAGE

Enclosed for your review is auto Fluff sampled results. We understand that schnitzer will sample the fluff once every six month begining of May 1995. Pls give me a call at (503) 434-3324. Let's talk about it. Thanks

***If you do not receive this transmission in its entirety, or if you have received this transmission in error, please call us immediately at 503/472-4181. This transmission may include confidential information and is intended only for the individual or entity named above. Any person other than the intended recipient (or others authorized by the intended recipient) is prohibited from reading, copying, or distributing this transmission.

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/WUI 36-0144 FAX 503/323-2793

April 6, 1995

Ms. Andrea Christman
Waste Management of North America, Inc.
4020 Lake Washington BLVD. NE
Suite 310
Kirkland, WA 98033

Dear Ms. Christman:

Enclosed is a report of shredder residue sample analytical results. Sampling was conducted on March 7, 1995. Following is a summary table of the sampling results:

Auto Fluff TCLP Analysis:

Date	Analysis	Analytical Results	EPA Limit	Units
3/7/95	Arsenic	ND	5.0	mg/L
	Barium	1.4	100.0	mg/L
	Cadmium	0.1	1.0	mg/L
	Chromium	0.06	5.0	mg/L
	Lead	0.1	5.0	mg/L
	Mercury	ND	0.2	mg/L
	Selenium	ND	1.0	mg/L
	Silver	ND	5.0	mg/L
	PCBs	16.4 (avg)	49.0	mg/kg

Should you have any questions or need further information, please contact either Daniel Lee at (503) 434-3324 or me at (503) 286-5771.

Sincerely,

Daniel Lee

Daniel Lee
Environmental Specialist

cc: Daniel Lee, SSP
Ken Irish, OWS

Report Date: March 28, 1995
Job Number: 950310AJ
PO Number: 22929
Project No: None Provided
Project Name: ASR #1 3-7-95

Keith Lawson
Schnitzer Steel Industries, Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The sample was received on 03/10/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950310AJ-1	ASR #1	Solid	03/07/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Kluch
Technical Director

RAK/atc

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950310AJ
Page Number: 2 of 2

Lab Sample ID: 950310AJ-1
Field ID: ASR #1
Date/Time: 03/07/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.004	1.4	100	mg/L
Cadmium	*	0.01	0.10	1.0	mg/L
Chromium	*	0.02	0.06	5.0	mg/L
Lead	*	0.1	0.1	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

ND means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.

Report Date: March 16, 1995
Job#: GE-950310AL-1
PO#: 22928
Project#: None Provided
Project: ASR #1 PCB 3-7-95

Keith Lawson
Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97233

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory:

Lab No.	Field Identification	Sample Matrix	Date	Time
1	ASR #1 PCB	Solid	03-07-95	NP

ANALYTICAL RESULTS:

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD

Sample ID	PCB		Aroclor	Units
ASR #1 PCB	23	14.4	1242	mg/Kg
ASR #1 PCB	9.8		1254	mg/Kg
ASR #1 PCB Duplicate	14	18.5	1242	mg/Kg
ASR #1 PCB Duplicate	21		1260	mg/Kg

Sincerely,

Susan M. Coffey
President

SMC/daj

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Tom Zelenka	From Daniel
Co. SSI	Co. CSRM
Dept.	Phone # 434-3324
Fax # 2804	Fax #

COFFEY LABORATORIES, INC.

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.36-0144 FAX 503/323-8793

MAINTENANCE OFFICE

FAX TRANSMITTAL COVER SHEET

TO: DANIEL LEE DATE: 9-15-95

CASCADE NUMBER OF PAGES BEING SENT

FROM: KEVIN LAUSEN (INCLUDING COVER PAGE 10

SSP

IF MESSAGE IS INCOMPLETE OR ILLEGIBLE, PLEASE CALL (503) 286-5771 EXT. 6955.
IF YOU WANT TO SEND A FAX TO SCHNITZER STEEL, OUR FAX NUMBER IS (503) 286-6956.

RE: TCLP & PCB TEST

PLEASE MAKE NOTE TO WASTE MANAGEMENT THAT AVE. DE VALUE EQUATES TO LESS THAN 5.0 PPM

Amended Report Date: September 14, 1995
Job Number: 950905BY
PO Number: 24599
Project No: None Provided
Project Name: ASR 9-1-95

Keith Lawson
Schnitzer Steel Industries,Inc
12005 N. Burgard Rd.
Portland, OR 97203

Analytical Narrative

The samples were received on 09/05/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950905BY-1	ASR #1	Solid	09/01/95	NP
950905BY-2	ASR #2	Solid	09/01/95	NP
950905BY-3	ASR #3	Solid	09/01/95	NP
950905BY-4	ASR #4	Solid	09/01/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Susan M. Coffey
President

SMC/atc

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-1
Field ID: ASR #1
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	1.2	mg/L	100
Cadmium	*	0.02	0.20	mg/L	1.0
Chromium	*	0.02	0.18	mg/L	5.0
Lead	*	0.1	1.6	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-2
Field ID: ASR #2
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	1.6	mg/L	100
Cadmium	*	0.02	0.18	mg/L	1.0
Chromium	*	0.02	0.10	mg/L	5.0
Lead	*	0.1	0.7	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-3
Field ID: ASR #3
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	1.2	mg/L	100
Cadmium	*	0.02	0.37	mg/L	1.0
Chromium	*	0.02	0.07	mg/L	5.0
Lead	*	0.1	1.6	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
elenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-4
Field ID: ASR #4
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	0.97	mg/L	100
Cadmium	*	0.02	0.24	mg/L	1.0
Chromium	*	0.02	2.6	mg/L	5.0
Lead	*	0.1	7.5	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Report Date: September 14, 1995
Job#: GE-950905CU-2
PO#: 24642
Project#: None Provided
Project: ASR 9-1-95

Keith Lawson
Schnitzer Steel Industries,Inc
12005 N. Burgard Rd.
Portland, OR 97203

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 09/05/95

Lab No.	Field Identification	Sample Matrix	Date	Time
1	ASR #5	Solid	09-01-95	NP
2	ASR #6	Solid	09-01-95	NP

Analytical results are on the following page(s):

Sincerely,

Harvey L. Pauly for

Susan M. Coffey
President

SMC/gle

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905CU
Page Number: 2 of 3

Lab Sample ID: 950905CU-1
Field ID: ASR #5
Date/Time: 09/01/95
Matrix: Solid

EPA Category: Extractable Organics
Analysis Performed: PCB's by EPA 8080, GC/ECD.
Analysis Date: 09/06/95
Analyst: JAG

Parameter	Detection Limit	Laboratory Blank	Analytical Result
Aroclor 1242	0.825	ND	5.4
Aroclor 1248	0.825	ND	ND
Aroclor 1254	0.825	ND	ND
Aroclor 1260	0.825	ND	ND
Aroclor 1262	0.825	ND	ND
Aroclor 1268	0.825	ND	ND

Results expressed as mg/kg unless otherwise noted.
ND means none detected at or above the detection limit listed.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905CU
Page Number: 3 of 3

Lab Sample ID: 950905CU-2
Field ID: ASR #6
Date/Time: 09/01/95
Matrix: Solid

EPA Category: Extractable Organics
Analysis Performed: PCB's by EPA 8080, GC/ECD.
Analysis Date: 09/06/95
Analyst: JAG

Parameter	Detection Limit	Laboratory Blank	Analytical Result
Aroclor 1242	0.825	ND	6.3
Aroclor 1248	0.825	ND	ND
Aroclor 1254	0.825	ND	ND
Aroclor 1260	0.825	ND	ND
Aroclor 1262	0.825	ND	ND
Aroclor 1268	0.825	ND	ND

Results expressed as mg/kg unless otherwise noted.
ND means none detected at or above the detection limit listed.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Amended Report Date: September 14, 1995
Job Number: 950905BY
PO Number: 24599
Project No: None Provided
Project Name: ASR 9-1-95

Keith Lawson
Schnitzer Steel Industries,Inc
12005 N. Burgard Rd.
Portland, OR 97203

Analytical Narrative

The samples were received on 09/05/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950905BY-1	ASR #1	Solid	09/01/95	NP
950905BY-2	ASR #2	Solid	09/01/95	NP
950905BY-3	ASR #3	Solid	09/01/95	NP
950905BY-4	ASR #4	Solid	09/01/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Susan M. Coffey
President

SMC/atc

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-1
Field ID: ASR #1
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	1.2	mg/L	100
Cadmium	*	0.02	0.20	mg/L	1.0
Chromium	*	0.02	0.18	mg/L	5.0
Lead	*	0.1	1.6	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-2
Field ID: ASR #2
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	1.6	mg/L	100
Cadmium	*	0.02	0.18	mg/L	1.0
Chromium	*	0.02	0.10	mg/L	5.0
Lead	*	0.1	0.7	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-3
Field ID: ASR #3
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	1.2	mg/L	100
Cadmium	*	0.02	0.37	mg/L	1.0
Chromium	*	0.02	0.07	mg/L	5.0
Lead	*	0.1	1.6	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905BY

Lab Sample ID: 950905BY-4
Field ID: ASR #4
Date/Time: 09/01/95
Matrix: Solid

EPA Category: TCLP Metals

Parameter	Method	Detection Limit	Analytical Result	Units	EPA Limit
Arsenic	*	0.1	ND	mg/L	5.0
Barium	*	0.01	0.97	mg/L	100
Cadmium	*	0.02	0.24	mg/L	1.0
Chromium	*	0.02	2.6	mg/L	5.0
Lead	*	0.1	7.5	mg/L	5.0
Mercury	*, 7470	0.05	ND	mg/L	0.20
Selenium	*	0.2	ND	mg/L	1.0
Silver	*	0.1	ND	mg/L	5.0

ND means none detected at or above the detection limit listed.
* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Report Date: September 14, 1995
Job#: GE-950905CU-2
PO#: 24642
Project#: None Provided
Project: ASR 9-1-95

Keith Lawson
Schnitzer Steel Industries,Inc
12005 N. Burgard Rd.
Portland, OR 97203

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory: 09/05/95

Lab No.	Field Identification	Sample Matrix	Date	Time
1	ASR #5	Solid	09-01-95	NP
2	ASR #6	Solid	09-01-95	NP

Analytical results are on the following page(s):

Sincerely,

Harvey L. Jacobs for

Susan M. Coffey
President

SMC/gle

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905CU
Page Number: 2 of 3

Lab Sample ID: 950905CU-1
Field ID: ASR #5
Date/Time: 09/01/95
Matrix: Solid

EPA Category: Extractable Organics
Analysis Performed: PCB's by EPA 8080, GC/ECD.
Analysis Date: 09/06/95
Analyst: JAG

Parameter	Detection Limit	Laboratory Blank	Analytical Result
Aroclor 1242	0.825	ND	5.4
Aroclor 1248	0.825	ND	ND
Aroclor 1254	0.825	ND	ND
\roclor 1260	0.825	ND	ND
Aroclor 1262	0.825	ND	ND
Aroclor 1268	0.825	ND	ND

Results expressed as mg/kg unless otherwise noted.
ND means none detected at or above the detection limit listed.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950905CU
Page Number: 3 of 3

Lab Sample ID: 950905CU-2
Field ID: ASR #6
Date/Time: 09/01/95
Matrix: Solid

EPA Category: Extractable Organics
Analysis Performed: PCB's by EPA 8080, GC/ECD.
Analysis Date: 09/06/95
Analyst: JAG

Parameter	Detection Limit	Laboratory Blank	Analytical Result
Aroclor 1242	0.825	ND	6.3
Aroclor 1248	0.825	ND	ND
Aroclor 1254	0.825	ND	ND
Aroclor 1260	0.825	ND	ND
Aroclor 1262	0.825	ND	ND
Aroclor 1268	0.825	ND	ND

Results expressed as mg/kg unless otherwise noted.
ND means none detected at or above the detection limit listed.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

TRANSMITTAL MEMORANDUM

To: Gary Fisher, OWS

From: Tim Todd

Date: April 3, 1996

Attachment: Laboratory Reports for February ASR Samples

Complete laboratory reports for February 1996 ASR samples are attached. I'm preparing a tabulated summary of historical data for past 2 years and will forward to you when complete. Please call me at 503/286-6944 with questions. Thank you.

SCHNITZER STEEL PRODUCTS CO.

5 N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

SCRAP DIVISION
FAX TRANSMITTAL COVER SHEET

TO: Gary Fisher DATE: 3/1/96

NUMBER OF PAGES BEING SENT

FROM: Tim Todd (INCLUDING COVER PAGE) 9

If message is incomplete or illegible, please call (503) 286-5771.

If you want to send a Fax to Schnitzer Steel, our Fax Number is (503) 286-6948.

RE: PCB & TCLP results attached, full data pack to follow - please call me at 503/286-6944 if you have questions.

Sorry - I've been trying to fax to your old fax # - hope this gets thru.

Polychlorinated Biphenyls per EPA 8080
Results In mg/kg (ppm)

Client: Schnitzer Steel Industries, Inc.
Project:
Received: 02/26/1996

NCA Number: P602305
Matrix: solid

Sample Name	Analyte	Result	MRL	Prep Date	Analy Date
ASR 5 *1	PCB 1016	ND	5.0	02/27	02/29
	PCB 1221	ND	5.0		
	PCB 1232	ND	5.0		
	PCB 1242	ND	5.0		
	PCB 1248	ND	5.0		
	PCB 1254	ND	5.0		
	PCB 1260	ND	5.0		
ASR 6 *1	PCB 1016	ND	5.0	02/27	02/29
	PCB 1221	ND	5.0		
	PCB 1232	ND	5.0		
	PCB 1242	ND	5.0		
	PCB 1248	ND	5.0		
	PCB 1254	ND	5.0		
	PCB 1260	ND	5.0		
Method Blank	PCB 1016	ND	5.0		
	PCB 1221	ND	5.0		
	PCB 1232	ND	5.0		
	PCB 1242	ND	5.0		
	PCB 1248	ND	5.0		
	PCB 1254	ND	5.0		
	PCB 1260	ND	5.0		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

COMMENTS

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Number: P602305
Received: 02/26/1996

---

1. Reporting limit is raised due to matrix interference.

TCLP per EPA 1311, 6010, 7470
Results In mg/L (ppm)

Client: Schnitzer Steel Industries, Inc.
Project:
Received: 02/26/1996

NCA Number: P602304
Matrix: solid

Sample Name	Analyte	Result	MRL	Extr Date	Prep Date	Analy Date
ASR 1	Arsenic	ND	0.50	02/27	02/28	02/29
	Barium	1.4	0.50			
	Cadmium	0.24	0.010			
	Chromium	0.26	0.010			
	Lead	5.0	0.20			
	Mercury	ND	0.00020			
	Selenium	ND	0.25			
	Silver	ND	0.010			
ASR 2	Arsenic	ND	0.50	02/27	02/28	02/29
	Barium	1.4	0.50			
	Cadmium	0.24	0.010			
	Chromium	0.21	0.010			
	Lead	3.2	0.20			
	Mercury	ND	0.00020			
	Selenium	ND	0.25			
	Silver	ND	0.010			
ASR 3	Arsenic	ND	0.50	02/27	02/28	02/29
	Barium	1.3	0.50			
	Cadmium	0.20	0.010			
	Chromium	0.20	0.010			
	Lead	1.7	0.20			
	Mercury	ND	0.00020			
	Selenium	ND	0.25			
	Silver	ND	0.010			
ASR 4	Arsenic	ND	0.50	02/27	02/28	02/29
	Barium	1.5	0.50			
	Cadmium	0.28	0.010			
	Chromium	0.28	0.010			
	Lead	3.3	0.20			
	Mercury	ND	0.00020			
	Selenium	ND	0.25			
	Silver	ND	0.010			

MRL Method Reporting Level
ND None Detected at or above the method reporting level

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

February 29, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

RE: JOB #
P.O.# 26205
PROJECT -

Enclosed are test results for your samples received in this lab on Feb. 26, 1996. For your reference, these analyses have been assigned our NCA # P602304.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Philip Nerenberg

Philip Nerenberg
Laboratory Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

TCLP per EPA 1311, 6010, 7470
Results In mg/L (ppm)

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602304
Matrix: solid
Sampled: 02/23/96
Received: 02/26/96

Client ID	Lab ID	Analyte	Result	MRL	Date Extracted	Date Prepared	Date Analyzed
ASR 1	P602304-1	Arsenic	ND	0.50	02/27/96	02/28/96	02/29/96
		Barium	1.4	0.50			
		Cadmium	0.24	0.010			
		Chromium	0.26	0.010			
		Lead	5.0	0.20			
		Mercury	ND	0.00020			
		Selenium	ND	0.25			
		Silver	ND	0.010			
ASR 2	P602304-2	Arsenic	ND	0.50	02/27/96	02/28/96	02/29/96
		Barium	1.4	0.50			
		Cadmium	0.24	0.010			
		Chromium	0.21	0.010			
		Lead	3.2	0.20			
		Mercury	ND	0.00020			
		Selenium	ND	0.25			
		Silver	ND	0.010			
ASR 3	P602304-3	Arsenic	ND	0.50	02/27/96	02/28/96	02/29/96
		Barium	1.3	0.50			
		Cadmium	0.20	0.010			
		Chromium	0.20	0.010			
		Lead	1.7	0.20			
		Mercury	ND	0.00020			
		Selenium	ND	0.25			
		Silver	ND	0.010			
ASR 4	P602304-4	Arsenic	ND	0.50	02/27/96	02/28/96	02/29/96
		Barium	1.5	0.50			
		Cadmium	0.28	0.010			
		Chromium	0.28	0.010			
		Lead	3.3	0.20			
		Mercury	ND	0.00020			
		Selenium	ND	0.25			
		Silver	ND	0.010			

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH
CREEK
ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

February 29, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

Re: Quality Control Data
JOB #
P.O.# 26205
PROJECT -

NCA project number P602304.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Philip Nerenberg
Laboratory Manager

SCHN00244206

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602304
Received: 02/26/96

METHOD BLANK
Batch # KR96021b
Results in mg/L (ppm)

Compound	Result	MRL
Arsenic	ND	0.50
Barium	ND	0.50
Cadmium	ND	0.010
Chromium	ND	0.010
Lead	ND	0.20
Selenium	ND	0.25
Date Extracted	02/27/96	
Date Prepared	02/28/96	
Date Analyzed	02/28/96	

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602304
Received: 02/26/96

LABORATORY CONTROL SAMPLE
Batch # KR96021b
Results In mg/L (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Arsenic	5.0	4.57	91	50-150
Barium	10	9.29	93	78-116
Cadmium	1.0	0.937	94	84-120
Chromium	5.0	4.60	92	83-116
Lead	5.0	4.67	93	89-117
Selenium	1.0	0.911	91	87-123

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602304
Received: 02/26/96

MATRIX SPIKE
Batch # KR96021e
Results in mg/L (ppm)

Spike ID P602304-1

Compound	Spike Added	Sample Conc	MS Conc	MS % Rec	QC Limit % Rec
Arsenic	5.0	ND	4.76	95	50-150
Barium	10	1.41	10.7	93	50-150
Cadmium	1.0	0.244	1.17	93	50-150
Chromium	5.0	0.257	4.89	93	50-150
Lead	5.0	5.04	9.74	94	50-150
Selenium	1.0	ND	0.964	96	50-150

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602304
Received: 02/26/96

METHOD BLANK
Batch # KR96023d
Results in mg/L (ppm)

Compound	Result	MRL
Silver	ND	0.010
Date Extracted	02/27/96	
Date Prepared	02/28/96	
Date Analyzed	02/29/96	

MATRIX SPIKE
Batch # KR96023d
Results in mg/L (ppm)

Spike ID P602304-1

Compound	Spike Added	Sample Conc	MS Conc	MS % Rec	QC Limit % Rec
Silver	2.0	ND	1.86	93	50-150

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602304
Received: 02/26/96

LABORATORY CONTROL SAMPLE
Batch # KR96023d
Results In mg/L (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Silver	2.0	1.89	95	76-112

20.9

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order #: P602304

CLIENT: SCHNITZER STEEL PROD
ADDRESS: 12005 N. BURGARD RD. PORTLAND OR 97203
PHONE: (503) 286-6944 FAX: 286-6956
PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: BOB GOOCH

REPORT TO: SCHNITZER STEEL PROD
ATTENTION: TIM TODD
BILLING TO: SCHNITZER STEEL P.O. BOX 10047 (97210)
P.O. NUMBER: 26205
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | 1
Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	Analysis Request: TCLP STRONTIUM	MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED
P602304-1	1. ASR 1	2/23/96	X			
2	2. ASR 2	2/23/96	X			
3	3. ASR 3	2/23/96	X			
4	4. ASR 4	2/23/96	X			
	5.					
	6.					
	7.					
	8.					
	9.					
	10.					

RELINQUISHED BY: [signature] DATE: 6-26-96
PRINT NAME: KEITH LAWSON FIRM: SSP TIME: 5:25 PM
RECEIVED BY: [signature] DATE: 2-26-96
PRINT NAME: FIRM: NCA TIME: 5:25 pm

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 7, 8/95

SCHN00244212

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

March 11, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

RE: JOB #
P.O.# 26204
PROJECT -

Enclosed are test results for your samples received in this lab on Feb. 26, 1996. For your reference, these analyses have been assigned our NCA # P602305.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Philip Nerenberg
Laboratory Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Polychlorinated Biphenyls per EPA 8080
Results in mg/kg (ppm)

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602305
Matrix: solid
Sampled: 02/23/96
Received: 02/26/96

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
ASR 5 *[1]	P602305-1	PCB 1016	ND	5.0	02/27/96	03/05/96
		PCB 1221	ND	5.0		
		PCB 1232	ND	5.0		
		PCB 1242	ND	5.0		
		PCB 1248	ND	5.0		
		PCB 1254	ND	5.0		
		PCB 1260	ND	5.0		
ASR 6 *[1]	P602305-2	PCB 1016	ND	5.0	02/27/96	03/05/96
		PCB 1221	ND	5.0		
		PCB 1232	ND	5.0		
		PCB 1242	ND	5.0		
		PCB 1248	ND	5.0		
		PCB 1254	ND	5.0		
		PCB 1260	ND	5.0		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

SURROGATE RECOVERIES (%)

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Number: P602305
Received: 02/26/1996

Sample Name	Analyte	Result	Control Limits
Polychlorinated Biphenyls per EPA 8080			
ASR 5	Decachlorobiphenyl	114	43-139
	2,4,5,6-Tetrachloro-m-xylene	69	42-137
ASR 6	Decachlorobiphenyl	118	43-139
	2,4,5,6-Tetrachloro-m-xylene	66	42-137

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

COMMENTS

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Number: P602305
Received: 02/26/1996

1. Reporting limit is raised due to matrix interference.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

March 11, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

Re: Quality Control Data
JOB #
P.O.# 26204
PROJECT -

NCA project number P602305.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Philip Nerenberg
Laboratory Manager

SCHN00244218

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
Polychlorinated Biphenyls per EPA 8080

Client: Schnitzer Steel Industries, Inc.
Project:

NCA Project #: P602305
Received: 02/26/96

METHOD BLANK
Batch # TN96006a
Results In mg/kg (ppm)

Compound	Result	MRL
PCB 1016	ND	0.050
PCB 1221	ND	0.10
PCB 1232	ND	0.050
PCB 1242	ND	0.050
PCB 1248	ND	0.050
PCB 1254	ND	0.050
PCB 1260	ND	0.050
Date Prepared	02/27/96	
Date Analyzed	03/05/96	

Surrogate Recovery (%)	Result	Control Limit
Decachlorobiphenyl	131	43-139
2,4,5,6-Tetrachloro-m-xylene	106	42-137

LABORATORY CONTROL SAMPLE
Batch # TN96006a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
PCB 1016	0.33	0.336	102	83-130
PCB 1260	0.33	0.336	102	69-140

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

BATCH QUALITY CONTROL RESULTS
Organochlorinated Pesticides per EPA 8080

Client: Schnitzer Steel Industries, Inc.
Project:
NCA Project #: P602305
Received: 02/26/96

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # TN96006a
Results in ug/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS % Rec
Aldrin (t)	8.3	--	--	0
4,4'-DDT (t)	33	--	--	0
Dieldrin (t)	33	--	--	0
Endrin (t)	33	--	--	0
Gamma-BHC	8.3	ND	5.43	65
Heptachlor (r)	8.3	ND	12.7	153

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Aldrin (t)	8.3	--	0	0	50	58-121
4,4'-DDT (t)	33	--	0	0	50	49-129
Dieldrin (t)	33	--	0	0	50	44-170
Endrin (t)	33	--	0	0	50	75-128
Gamma-BHC	8.3	7.23	87	29	50	58-121
Heptachlor (r)	8.3	12.8	154	0.65	50	49-133

(r) Spike recovery is out of control limits due to matrix interference.

(t) Unable to calculate spike recovery due to matrix interference.

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

20.7

CHAIN OF CUSTODY REPORT

Work Order #: P602305

CLIENT: SCHNITZER STEEL PROD.
ADDRESS: 12005 N. BURGARD RD.
PORTLAND OR 97203
PHONE: (503) 286-6944 FAX: 286-6956

REPORT TO: SCHNITZER STEEL PROD
ATTENTION: TIM TODD
BILLING TO: SCHNITZER STEEL PROD PO. BOX 10047 (97210)
P.O. NUMBER: 26204
NCA QUOTE #:

PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: BOB GOOCH

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | 1
Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	Analysis Request: PCB									MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED
P602305-1	1. ASR #5	2/23/96		X										
2	2. ASR #6	2/23/96		X										
	3.													
	4.													
	5.													
	6.													
	7.													
	8.													
	9.													
	10.													

RELINQUISHED BY: [signature] DATE: 6-26-95
PRINT NAME: KEITH LAWSON FIRM: SSP TIME: 5:25 PM
RECEIVED BY: Karin Stanley DATE: 2-26-96
PRINT NAME: Karin Stanley FIRM: NCA TIME: 525 pm

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 7, 8/95

SCHN00244221

SCHNITZER STEEL PRODUCTS CO.

105 N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

September 24, 1996

Mr. Gary Fisher
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: August 1996 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on August 16, 1996, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to North Creek Analytical in Portland, Oregon, and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 2 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. Copies of laboratory reports for the August 1996 samples are attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR1	8/96	ND[b]	1.5	0.40	0.066	1.7	ND	ND	ND	NA[c]
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL[d]		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.2[e]	0.25	0.1	5.0[f]
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.825
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[g]

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
A[illegible]8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1 ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2 ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3 ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4 ASR		ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6
#9		ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6
OVERALL:										
Average		--	--	0.32	--	1.99	--	--	--	12.2
Variance		--	--	0.03	--	4.09	--	--	--	41.3
Standard Dev.		--	--	0.18	--	2.02	--	--	--	6.4
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.26	--	1.48	--	--	--	9.31
UCL		--	--	0.36	--	2.64	--	--	--	13.8
Cut-off Value		--	--	1.04	--	5.48	--	--	--	51.85

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] Hg MRL reported in ug/L.
[f] PCB MRL is for each Aroclor; MRL is elevated due to matrix interference.
[g] Not reported by the analytical laboratory.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

September 6, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

RE: JOB #
P.O.#
PROJECT - ASR SAMPLING

Enclosed are test results for your samples received in this lab on Aug. 16, 1996. For your reference, these analyses have been assigned our NCA # P608327.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Philip Nerenberg
Laboratory Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

Polychlorinated Biphenyls per EPA 8080

Results in mg/kg (ppm)

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Project #: P608327
Matrix: solid
Sampled: 08/16/96
Received: 08/16/96

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
ASR-5 *[1]	P608327-1	PCB 1016	ND	1.0	08/19/96	08/30/96
		PCB 1221	ND	2.0		
		PCB 1232	ND	1.0		
		PCB 1242	20	1.0		
		PCB 1248	ND	1.0		
		PCB 1254	ND	1.0		
		PCB 1260	ND	1.0		
ASR-6 *[1]	P608327-2	PCB 1016	ND	1.0	08/19/96	08/30/96
		PCB 1221	ND	2.0		
		PCB 1232	ND	1.0		
		PCB 1242	24	1.0		
		PCB 1248	ND	1.0		
		PCB 1254	ND	1.0		
		PCB 1260	ND	1.0		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

SURROGATE RECOVERIES (%)

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Number: P608327
Received: 08/16/1996

Sample Name	Analyte	Result	Control Limits
Polychlorinated Biphenyls per EPA 8080			
ASR-5	Decachlorobiphenyl	— *2	66-142
	2,4,5,6-Tetrachloro-m-xylene	— *2	74-129
ASR-6	Decachlorobiphenyl	— *2	66-142
	2,4,5,6-Tetrachloro-m-xylene	— *2	74-129

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

COMMENTS

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Number: P608327
Received: 08/16/1996

1. Reporting limit is raised due to high analyte concentration.

2. Unable to calculate surrogate recovery due to high analyte concentration.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

September 6, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

Re: Quality Control Data
JOB #
P.O.#
PROJECT - ASR SAMPLING

NCA project number P608327.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Philip Nerenberg
Laboratory Manager

SCHN00244234

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

BATCH QUALITY CONTROL RESULTS
Polychlorinated Biphenyls per EPA 8080

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Project #: P608327
Received: 08/16/96

METHOD BLANK
Batch # PN96036a
Results In mg/kg (ppm)

Compound	Result	MRL
PCB 1016	ND	0.050
PCB 1221	ND	0.10
PCB 1232	ND	0.050
PCB 1242	ND	0.050
PCB 1248	ND	0.050
PCB 1254	ND	0.050
PCB 1260	ND	0.050
Date Prepared	08/19/96	
Date Analyzed	08/28/96	

Surrogate Recovery (%)	Result	Control Limit
Decachlorobiphenyl	125	66-142
2,4,5,6-Tetrachloro-m-xylene	100	74-129

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

BATCH QUALITY CONTROL RESULTS
Polychlorinated Biphenyls per EPA 8080

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING
NCA Project #: P608327
Received: 08/16/96

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # PN96036a **Spike ID P608291-1**
Results in mg/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
PCB 1016 (t)	0.33	ND	—	—
PCB 1260 (t)	0.33	ND	—	—

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
PCB 1016 (t)	0.33	—	—	—	50	60-149
PCB 1260 (t)	0.33	—	—	—	50	70-137

(t) Unable to calculate spike recovery due to matrix interference.

LABORATORY CONTROL SAMPLE
Batch # PN96036a
Results in mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
PCB 1016	0.33	0.292	88	83-130
PCB 1260	0.33	0.325	98	69-140

22

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

CHAIN OF CUSTODY REPORT

Work Order # P608327

REPORT TO: Schnitzer Steel
ATTENTION: Tim Todd
ADDRESS: P.O. Box 10047
Portland OR 97210
PHONE: 503/286-6944 FAX: 286-6948
PROJECT NAME: ASR Sampling
PROJECT NUMBER:
SAMPLED BY: Tim Todd / Dean Thorne

INVOICE TO:
ATTENTION: Same
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [X] Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: PCB's	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	ASR-5	8/6/96 0900		X	S	1	
2.	ASR-6	8/6/96 0800		X			
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature): Timothy R. Todd	DATE: 8/16/96	RECEIVED BY (Signature): Bob Falsho	DATE: 8/16/96
PRINT NAME: Timothy Todd FIRM: SSI	TIME: 1030	PRINT NAME: Bob Falsho FIRM: NCA	TIME: 1145
RELINQUISHED BY (Signature): Bob Falsho	DATE: 8-16-96	RECEIVED BY (Signature): Sara McClurg	DATE: 8-16-96
PRINT NAME: FIRM: NCA	TIME: 1345	PRINT NAME: Sam McClurg FIRM: NCA	TIME: 1345

ADDITIONAL REMARKS:

PAGE OF

CHC Rev 8, 1/96

SCHN00244237

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

August 29, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

RE: JOB #
P.O.#
PROJECT - ASR SAMPLING

Enclosed are test results for your samples received in this lab on Aug. 16, 1996. For your reference, these analyses have been assigned our NCA # P608326.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Philip Nerenberg
Laboratory Manager

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

TCLP per EPA 1311, 6020, 7470
Results In mg/L (ppm)

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Project #: P608326
Matrix: soil
Sampled: 08/16/96
Received: 08/16/96

Client ID	Lab ID	Analyte	Result	MRL	Date Extracted	Date Prepared	Date Analyzed
ASR-1	P608326-1	Arsenic	ND	0.50	08/21/96	08/23/96	08/24/96
		Barium	1.5	0.50			
		Cadmium	0.40	0.010			
		Chromium	0.066	0.010			
		Lead	1.7	0.20			
		Mercury	ND	0.00050			
		Selenium	ND	0.25			
		Silver	ND	0.010			
ASR-2	P608326-2	Arsenic	ND	0.50	08/21/96	08/23/96	08/24/96
		Barium	1.7	0.50			
		Cadmium	0.53	0.010			
		Chromium	0.025	0.010			
		Lead	0.54	0.20			
		Mercury	ND	0.00050			
		Selenium	ND	0.25			
		Silver	ND	0.010			
ASR-3	P608326-3	Arsenic	ND	0.50	08/21/96	08/23/96	08/24/96
		Barium	1.4	0.50			
		Cadmium	0.57	0.010			
		Chromium	0.030	0.010			
		Lead	1.1	0.20			
		Mercury	ND	0.00050			
		Selenium	ND	0.25			
		Silver	ND	0.010			
ASR-4	P608326-4	Arsenic	ND	0.50	08/21/96	08/23/96	08/24/96
		Barium	1.7	0.50			
		Cadmium	0.59	0.010			
		Chromium	0.024	0.010			
		Lead	0.98	0.20			
		Mercury	ND	0.00050			
		Selenium	ND	0.25			
		Silver	ND	0.010			

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

August 29, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

Attention: Tim Todd

Re: Quality Control Data
JOB #
P.O.#
PROJECT - ASR SAMPLING

NCA project number P608326.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Philip Nerenberg
Laboratory Manager

SCHN00244244

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Project #: P608326
Received: 08/16/96

METHOD BLANK
Batch # KR96090a
Results In mg/L (ppm)

Compound	Result	MRL
Arsenic	ND	0.50
Barium	ND	0.50
Cadmium	ND	0.010
Chromium	ND	0.010
Lead	ND	0.20
Selenium	ND	0.25
Silver	ND	0.010
Date Extracted	08/21/96	
Date Prepared	08/22/96	
Date Analyzed	08/23/96	

MATRIX SPIKE
Batch # KR96090c
Results In mg/L (ppm)

Spike ID P608326-1

Compound	Spike Added	Sample Conc	MS Conc	MS % Rec	QC Limit % Rec
Arsenic	5.0	ND	4.99	100	50-150
Barium	10	1.50	10.9	94	50-150
Cadmium	1.0	0.400	1.56	116	50-150
Chromium	5.0	0.0657	4.71	93	50-150
Lead	5.0	1.70	6.46	95	50-150
Selenium	1.0	ND	1.26	126	50-150
Silver	2.0	ND	1.85	93	50-150

SCHN00244245

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Project #: P608326
Received: 08/16/96

LABORATORY CONTROL SAMPLE
Batch # KR96090a
Results In mg/L (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Arsenic	5.0	5.66	113	78-115
Barium	10	9.70	97	74-111
Cadmium	1.0	1.13	113	50-150
Chromium	5.0	5.04	101	80-104
Lead	5.0	4.95	99	83-109
Selenium	1.0	1.38	138	50-150
Silver	2.0	1.88	94	79-108

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

Offices:
BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

BATCH QUALITY CONTROL RESULTS
TCLP per EPA 1311, 6010, 7470

Client: Schnitzer Steel Industries, Inc.
Project: ASR SAMPLING

NCA Project #: P608326
Received: 08/16/96

METHOD BLANK
Batch # ZT96121c
Results in mg/L (ppm)

Compound	Result	MRL
Mercury	ND	0.00050
Date Extracted	08/21/96	
Date Prepared	08/23/96	
Date Analyzed	08/23/96	

MATRIX SPIKE
Batch # ZT96121c **Spike ID P608326-1**
Results in mg/L (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS % Rec	QC Limit % Rec
Mercury	0.0050	ND	0.0048	96	50-150

LABORATORY CONTROL SAMPLE
Batch # ZT96121c
Results in mg/L (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Mercury	0.0050	0.0048	96	81-107

22

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 48 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

CHAIN OF CUSTODY REPORT

Work Order # P608826

REPORT TO: Schnitzer Steel
ATTENTION: Tim Todd
ADDRESS: P.O. Box 10047
Portland OR 97210
PHONE: 503/286-6944 FAX: 503/286-6948
PROJECT NAME: ASR Sampling
PROJECT NUMBER:
SAMPLED BY: Tim Todd/Dean Thorne

INVOICE TO:
ATTENTION: Same
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: [X] Standard (10) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: TCLP metals										MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	ASR-1	8/16/96 0800		X										S	1	
2.	ASR-2	8/16/96 0800		X										S	1	
3.	ASR-3	8/16/96 0800		X										S	1	
4.	ASR-4	8/16/96 0800		X										S	1	
5.																
6.																
7.																
8.																
9.																
10.																

RELINQUISHED BY (Signature): Timothy R. Todd	DATE: 8/16/96	RECEIVED BY (Signature): Bob Fahnsholz	DATE: 8/16/96
PRINT NAME: Timothy Todd FIRM: SSI	TIME: 1030	PRINT NAME: Bob Fahnsholz FIRM: NCA	TIME: 1145
RELINQUISHED BY (Signature): Bob Fahnsholz	DATE: 8-16-96	RECEIVED BY (Signature): Sara McClurg	DATE: 8-16-96
PRINT NAME: FIRM: NCA	TIME: 1845	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 1845

ADDITIONAL REMARKS:

PAGE OF

CHC Rev 2, 1996

SCHN00244248

Oregon Waste Systems, Inc.
Columbia Ridge Landfill & Recycling Center
18177 Cedar Springs Lane
Arlington, Oregon 97812
503/454-2030 • FAX: 503/454-2133

A Waste Management Company

September 27, 1996

Gerry Preston
Oregon Department of Environmental Quality
Eastern Region
400 E. Scenic Drive
The Dalles, OR. 97053

RE: Results from Schnitzer Steel's Sampling and Analysis of Auto Shredding Residue

Dear Mr. Preston:

In accordance with Condition 6 of your September 18, 1995 approval letter, attached please find the test results and statistical summary for Schnitzer Steel's automobile shredder residue for the previous two years. Also attached is a letter from Schnitzer Steel dated September 24, 1996 which accompanied the test results.

As indicated by Mr. Timothy Todd, of Schnitzer Steel Products Co., the most recent sampling of the shredder residue, conducted on August 16, 1996, was performed in accordance with Schnitzer Steel's May 1995 Sampling and Analysis Plan and statistically evaluated using EPA's "Scrap Metal Shredder Sampling Guidance Document" issued in August 1993. Based on the statistical summary provided in Table 1 the analysis demonstrated a 95% confidence level for cadmium, lead, and PCB concentrations which are below the regulatory levels for the respective contaminants. In addition, the analysis indicates that the average concentration of the contaminants is below the cut-off value.

If you have any questions regarding this submittal or if I can be of further assistance please call me or Samir Jiries at (541) 454-2643.

Sincerely
Waste Management Disposal Services of Oregon, Inc.

Lee Weber
Compliance Manager

cc: Tim Davison (DEQ)
Ken Lucas (DEQ)
Wayne Thomas (DEQ)
Samir Jiries
Steve Seed
Timothy R. Todd (Schnitzer)

Printed on recycled paper

SCHNITZER STEEL PRODUCTS CO.

12005 N. Burgard St. Portland, Oregon 97203
Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

September 24, 1996

Mr. Gary Fisher
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: August 1996 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on August 16, 1996, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to North Creek Analytical in Portland, Oregon, and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 2 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. Copies of laboratory reports for the August 1996 samples are attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR1	8/96	ND[b]	1.5	0.40	0.066	1.7	ND	ND	ND	NA[c]
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL[d]		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
R1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.2[e]	0.25	0.1	5.0[f]
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.825
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
R#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[g]

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1 ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2 ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3 ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4 ASR		ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
		ND	1.29	ND	ND	ND	ND	ND	ND	9.6
#9		ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6
OVERALL:										
Average		--	--	0.32	--	1.99	--	--	--	12.2
Variance		--	--	0.03	--	4.09	--	--	--	41.3
Standard Dev.		--	--	0.18	--	2.02	--	--	--	6.4
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.26	--	1.48	--	--	--	9.31
UCL		--	--	0.36	--	2.64	--	--	--	13.8
Cut-off Value		--	--	1.04	--	5.48	--	--	--	51.85

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] Hg MRL reported in ug/L.
[f] PCB MRL is for each Aroclor; MRL is elevated due to matrix interference.
[g] Not reported by the analytical laboratory.

Oregon Waste Systems, Inc.
Columbia Ridge Landfill & Recycling Center
18177 Cedar Springs Lane
Arlington, Oregon 97812
503/454-2030 • FAX: 503/454-2133

A Waste Management Company

April 1, 1997

Gerry Preston
Oregon Department of Environmental Quality
Eastern Region
400 E. Scenic Drive
The Dalles, OR. 97053

RE: Results from Schnitzer Steel's Sampling and Analysis of Auto Shredding Residue

Dear Mr. Preston:

In accordance with Condition 6 of your September 18, 1995 approval letter, attached please find the test results and statistical summary for Schnitzer Steel's automobile shredder residue for the previous two years. Also attached is a letter from Schnitzer Steel dated March 17, 1997 which accompanied the test results.

As indicated by Mr. Timothy Todd, of Schnitzer Steel Products Co., the most recent sampling of the shredder residue, conducted on January 16, 1997, was performed in accordance with Schnitzer Steel's May 1995 Sampling and Analysis Plan and statistically evaluated using EPA's "Scrap Metal Shredder Sampling Guidance Document" issued in August 1993. Based on the statistical summary provided in Table 1 the analysis demonstrated a 95% confidence level for cadmium, lead, and PCB concentrations, which are below the regulatory levels for the respective contaminants. In addition, the analysis indicates that the average concentration of the contaminants is below the cut-off value.

If you have any questions regarding this submittal or if I can be of further assistance please call me or Samir Jiries at (541) 454-2643.

Sincerely
Waste Management Disposal Services of Oregon, Inc.

Lee Weber
Compliance Manager

cc: Tim Davison (DEQ)
Ken Lucas (DEQ)
Wayne Thomas (DEQ)
Samir Jiries
Steve Seed
Timothy R. Todd (Schnitzer)

Printed on recycled paper

SCHNITZER STEEL PRODUCTS CO.

305 N. Burgard St. Portland, Oregon 97203
Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

March 17, 1997

Mr. Gary Fisher
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: January 1997 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on January 16, 1997, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to North Creek Analytical in Portland, Oregon, and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 2 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. Copies of laboratory reports for the January 1997 samples are attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	1/97	ND[b]	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL[a]		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.00	0.26	0.01	33.85
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA[c]
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.2[e]	0.25	0.1	5.0[f]
Average		--	1.4	0.24	0.24	3.3	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.825
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[a]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1 ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2 ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
[illegible] ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#4 ASR	11/94	ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6
#9		ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
S-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
OVERALL:										
Average		--	--	0.34	--	1.97	--	--	--	13.4
Median		--	--	0.36	--	1.60	--	--	--	11.0
Variance		--	--	0.03	--	3.88	--	--	--	72.4
Standard Dev.		--	--	0.18	--	1.97	--	--	--	8.5
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Typ.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.29	--	1.46	--	--	--	10.5
UCL		--	--	0.39	--	2.48	--	--	--	16.4
Cut-off Value		--	--	1.04	--	5.43	--	--	--	52.4

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] Reported in ug/kg.
[f] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.
[g] Not reported by the analytical laboratory.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
1	P701276-01	Solid	1/16/97
2	P701276-02	Solid	1/16/97
3	P701276-03	Solid	1/16/97
4	P701276-04	Solid	1/16/97
5	P701276-05	Solid	1/16/97
6	P701276-06	Solid	1/16/97

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

TCLP Metals per EPA 1311/6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
1			**P701276-01**				**Solid**	
Arsenic	0170371	1/20/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**0.820**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.624**	"	
Chromium	"	"	"	EPA 6010A	0.0100	**0.0210**	"	
Lead	"	"	"	EPA 6010A	0.200	**2.81**	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	0170556	"	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	**0.000466**	"	
2			**P701276-02**				**Solid**	
Arsenic	0170371	1/20/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**1.07**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.471**	"	
Chromium	"	"	"	EPA 6010A	0.0100	**0.0380**	"	
Lead	"	"	"	EPA 6010A	0.200	**1.93**	"	
Selenium	"	"	"	EPA 6010A	0.250	**0.263**	"	
Silver	0170556	"	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	**0.000255**	"	
3			**P701276-03**				**Solid**	
Arsenic	0170371	1/20/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**1.12**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.651**	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Lead	"	"	"	EPA 6010A	0.200	ND	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	0170556	"	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	**0.000477**	"	
4			**P701276-04**				**Solid**	
Arsenic	0170372	1/21/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**1.03**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.478**	"	
Chromium	"	"	"	EPA 6010A	0.0100	**0.0410**	"	
Lead	"	"	"	EPA 6010A	0.200	**1.94**	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	0170556	1/20/97	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	ND	"	

Refer to end of report for text of notes and definitions.

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

SCHN00244265

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

Polychlorinated Biphenyls per EPA Method 8081
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
5			**P701276-05**				**Solid**	
Aroclor 1016	0170477	1/28/97	1/30/97		1.0	ND	mg/kg dry	
Aroclor 1221	"	"	"		2.0	ND	"	
Aroclor 1232	"	"	"		1.0	ND	"	
Aroclor 1242	"	"	"		1.0	**22.6**	"	
Aroclor 1248	"	"	"		1.0	ND	"	
Aroclor 1254	"	"	"		1.0	ND	"	
Aroclor 1260	"	"	"		1.0	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*NR*	%	1
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*NR*	"	1
6			**P701276-06**				**Solid**	
Aroclor 1016	0170477	1/28/97	1/30/97		2.0	ND	mg/kg dry	
Aroclor 1221	"	"	"		4.0	ND	"	
oclor 1232	"	"	"		2.0	ND	"	
Aroclor 1242	"	"	"		2.0	**45.1**	"	
Aroclor 1248	"	"	"		2.0	ND	"	
Aroclor 1254	"	"	"		2.0	ND	"	
Aroclor 1260	"	"	"		2.0	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*NR*	%	1
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*NR*	"	1

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
5	P701276-05	Solid	59.8	%
6	P701276-06	Solid	66.0	%

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

TCLP Metals per EPA 1311/6000/7000 Series Method/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0170363	**Date Prepared: 1/22/97**				**Extraction Method: Metals**					
Blank	**0170363-BLK1**									
Mercury	1/23/97			ND	mg/l	0.000200				
LCS	**0170363-BS1**									
Mercury	1/23/97	0.00500		0.00478	mg/l	80.0-120	95.6			
Matrix Spike	**0170363-MS1**		**P701250-01**							
Mercury	1/23/97	0.00500	ND	0.00490	mg/l	50.0-150	98.0			
Batch: 0170371	**Date Prepared: 1/20/97**				**Extraction Method: EPA 1311/3010**					
Blank	**0170371-BLK1**									
Arsenic	1/30/97			ND	mg/l	0.500				
Barium	"			ND	"	0.500				
Cadmium	"			ND	"	0.0100				
Chromium	"			ND	"	0.0100				
Lead	"			ND	"	0.200				
Selenium	"			ND	"	0.250				
LCS	**0170371-BS1**									
Arsenic	1/30/97	5.00		5.51	mg/l	50.0-150	110			
Barium	"	10.0		9.35	"	50.0-150	93.5			
Cadmium	"	1.00		1.03	"	50.0-150	103			
Chromium	"	5.00		4.82	"	50.0-150	96.4			
Lead	"	5.00		5.15	"	50.0-150	103			
Selenium	"	1.00		1.00	"	50.0-150	100			
Matrix Spike	**0170371-MS1**		**P701231-02**							
Arsenic	1/30/97	5.00	ND	4.95	mg/l	50.0-150	99.0			
Barium	"	10.0	0.866	9.79	"	50.0-150	89.2			
Cadmium	"	1.00	ND	1.02	"	50.0-150	102			
Chromium	"	5.00	ND	4.53	"	50.0-150	90.6			
Lead	"	5.00	ND	5.07	"	50.0-150	101			
Selenium	"	1.00	ND	0.800	"	50.0-150	80.0			
Batch: 0170372	**Date Prepared: 1/21/97**				**Extraction Method: EPA 1311/3010**					
Matrix Spike	**0170372-MS1**		**P701276-04**							
Arsenic	1/30/97	5.00	ND	5.27	mg/l	50.0-150	105			
Barium	"	10.0	1.03	10.0	"	50.0-150	89.7			

h Creek Analytical, Inc.

Refer to end of report for text of notes and definitions.

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

RCRA Metals per EPA 1311/6000/7000 Series Method/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)	**0170372-MS1**		**P701276-04**							
Cadmium	1/30/97	1.00	0.478	1.48	mg/l	50.0-150	100			
Chromium	"	5.00	0.0410	4.55	"	50.0-150	90.2			
Lead	"	5.00	1.94	6.84	"	50.0-150	98.0			
Selenium	"	1.00	ND	0.990	"	50.0-150	99.0			
Batch: 0170556	**Date Prepared: 1/20/97**				**Extraction Method: EPA 1311/3010**					
Blank	**0170556-BLK1**									
Silver	1/30/97			ND	mg/l	0.0100				
LCS	**0170556-BS1**									
Silver	1/30/97	2.00		1.66	mg/l	50.0-150	83.0			
Matrix Spike	**0170556-MS1**		**P701276-04**							
Silver	1/30/97	2.00	ND	1.71	mg/l	50.0-150	85.5			

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled: 1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received: 1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported: 2/3/97 10:14

Polychlorinated Biphenyls per EPA Method 8081/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0170477	**Date Prepared: 1/28/97**				**Extraction Method: EPA 3550**					
Blank	**0170477-BLK1**									
Aroclor 1016	1/29/97			ND	mg/kg dry	0.050				
Aroclor 1221	"			ND	"	0.100				
Aroclor 1232	"			ND	"	0.050				
Aroclor 1242	"			ND	"	0.050				
Aroclor 1248	"			ND	"	0.050				
Aroclor 1254	"			ND	"	0.050				
Aroclor 1260	"			ND	"	0.050				
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*37.3*	"	*74.0-129*	*112*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*40.7*	"	*66.0-142*	*122*			
LCS	**0170477-BS1**									
Aroclor 1016	1/29/97	0.333		0.331	mg/kg dry	60.0-135	99.4			
Aroclor 1260	"	0.333		0.373	"	62.0-147	112			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*37.3*	"	*74.0-129*	*112*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*39.7*	"	*66.0-142*	*119*			
Matrix Spike	**0170477-MS1**		**P701232-04**							
Aroclor 1016	1/30/97	0.393	ND	0.304	mg/kg dry	60.0-149	77.4			
Aroclor 1260	"	0.393	ND	0.382	"	70.0-137	97.2			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*39.3*		*32.4*	"	*74.0-129*	*82.4*			
Surrogate: Decachlorobiphenyl	"	*39.3*		*38.3*	"	*66.0-142*	*97.5*			
Matrix Spike Dup	**0170477-MSD1**		**P701232-04**							
Aroclor 1016	1/30/97	0.393	ND	0.315	mg/kg dry	60.0-149	80.2	50.0	3.55	
Aroclor 1260	"	0.393	ND	0.397	"	70.0-137	101	50.0	3.83	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*39.3*		*34.5*	"	*74.0-129*	*87.8*			
Surrogate: Decachlorobiphenyl	"	*39.3*		*39.7*	"	*66.0-142*	*101*			

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

Notes and Definitions

#	Note
1	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

SCHNITZER STEEL PRODUCTS CO.

12005 N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
503/286-5771 FAX 503/286-6948

March 17, 1997

Mr. Gary Fisher
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: January 1997 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on January 16, 1997, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to North Creek Analytical in Portland, Oregon, and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 2 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. Copies of laboratory reports for the January 1997 samples are attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	1/97	ND[b]	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL[d]		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.00	0.26	0.01	33.85
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA[c]
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.2[e]	0.25	0.1	5.0[f]
Average		--	1.4	0.24	0.24	3.3	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.825
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[a]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
A #8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1 ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2 ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3 ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#4 ASR	11/94	ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#[illegible]		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6
#9		ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
OVERALL:										
Average		--	--	0.34	--	1.97	--	--	--	13.4
Median		--	--	0.36	--	1.60	--	--	--	11.0
Variance		--	--	0.03	--	3.88	--	--	--	72.4
Standard Dev.		--	--	0.18	--	1.97	--	--	--	8.5
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.29	--	1.46	--	--	--	10.5
UCL		--	--	0.39	--	2.48	--	--	--	16.4
Cut-off Value		--	--	1.04	--	5.43	--	--	--	52.4

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] Reported in ug/kg.
[f] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.
[g] Not reported by the analytical laboratory.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
1	P701276-01	Solid	1/16/97
2	P701276-02	Solid	1/16/97
3	P701276-03	Solid	1/16/97
4	P701276-04	Solid	1/16/97
5	P701276-05	Solid	1/16/97
6	P701276-06	Solid	1/16/97

North Creek Analytical, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

TCLP Metals per EPA 1311/6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
1			**P701276-01**				**Solid**	
Arsenic	0170371	1/20/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**0.820**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.624**	"	
Chromium	"	"	"	EPA 6010A	0.0100	**0.0210**	"	
Lead	"	"	"	EPA 6010A	0.200	**2.81**	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	0170556	"	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	**0.000466**	"	
2			**P701276-02**				**Solid**	
Arsenic	0170371	1/20/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**1.07**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.471**	"	
Chromium	"	"	"	EPA 6010A	0.0100	**0.0380**	"	
Lead	"	"	"	EPA 6010A	0.200	**1.93**	"	
Selenium	"	"	"	EPA 6010A	0.250	**0.263**	"	
Silver	0170556	"	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	**0.000255**	"	
3			**P701276-03**				**Solid**	
Arsenic	0170371	1/20/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**1.12**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.651**	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Lead	"	"	"	EPA 6010A	0.200	ND	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	0170556	"	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	**0.000477**	"	
4			**P701276-04**				**Solid**	
Arsenic	0170372	1/21/97	1/30/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**1.03**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	**0.478**	"	
Chromium	"	"	"	EPA 6010A	0.0100	**0.0410**	"	
Lead	"	"	"	EPA 6010A	0.200	**1.94**	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	0170556	1/20/97	"	EPA 6010A	0.0100	ND	"	
Mercury	0170363	1/22/97	1/23/97	EPA 7470A	0.000200	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

Polychlorinated Biphenyls per EPA Method 8081
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
5			**P701276-05**				**Solid**	
Aroclor 1016	0170477	1/28/97	1/30/97		1.0	ND	mg/kg dry	
Aroclor 1221	"	"	"		2.0	ND	"	
Aroclor 1232	"	"	"		1.0	ND	"	
Aroclor 1242	"	"	"		1.0	**22.6**	"	
Aroclor 1248	"	"	"		1.0	ND	"	
Aroclor 1254	"	"	"		1.0	ND	"	
Aroclor 1260	"	"	"		1.0	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*NR*	*%*	1
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*NR*	"	1
6			**P701276-06**				**Solid**	
Aroclor 1016	0170477	1/28/97	1/30/97		2.0	ND	mg/kg dry	
Aroclor 1221	"	"	"		4.0	ND	"	
Aroclor 1232	"	"	"		2.0	ND	"	
Aroclor 1242	"	"	"		2.0	**45.1**	"	
Aroclor 1248	"	"	"		2.0	ND	"	
Aroclor 1254	"	"	"		2.0	ND	"	
Aroclor 1260	"	"	"		2.0	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*NR*	*%*	1
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*NR*	"	1

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
5	P701276-05	Solid	59.8	%
6	P701276-06	Solid	66.0	%

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled: 1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received: 1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported: 2/3/97 10:14

TCLP Metals per EPA 1311/6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0170363	**Date Prepared: 1/22/97**				**Extraction Method: Metals**					
Blank	**0170363-BLK1**									
Mercury	1/23/97			ND	mg/l	0.000200				
LCS	**0170363-BS1**									
Mercury	1/23/97	0.00500		0.00478	mg/l	80.0-120	95.6			
Matrix Spike	**0170363-MS1**		**P701250-01**							
Mercury	1/23/97	0.00500	ND	0.00490	mg/l	50.0-150	98.0			
Batch: 0170371	**Date Prepared: 1/20/97**				**Extraction Method: EPA 1311/3010**					
Blank	**0170371-BLK1**									
Arsenic	1/30/97			ND	mg/l	0.500				
Barium	"			ND	"	0.500				
Cadmium	"			ND	"	0.0100				
Chromium	"			ND	"	0.0100				
Lead	"			ND	"	0.200				
Selenium	"			ND	"	0.250				
LCS	**0170371-BS1**									
Arsenic	1/30/97	5.00		5.51	mg/l	50.0-150	110			
Barium	"	10.0		9.35	"	50.0-150	93.5			
Cadmium	"	1.00		1.03	"	50.0-150	103			
Chromium	"	5.00		4.82	"	50.0-150	96.4			
Lead	"	5.00		5.15	"	50.0-150	103			
Selenium	"	1.00		1.00	"	50.0-150	100			
Matrix Spike	**0170371-MS1**		**P701231-02**							
Arsenic	1/30/97	5.00	ND	4.95	mg/l	50.0-150	99.0			
Barium	"	10.0	0.866	9.79	"	50.0-150	89.2			
Cadmium	"	1.00	ND	1.02	"	50.0-150	102			
Chromium	"	5.00	ND	4.53	"	50.0-150	90.6			
Lead	"	5.00	ND	5.07	"	50.0-150	101			
Selenium	"	1.00	ND	0.800	"	50.0-150	80.0			
Batch: 0170372	**Date Prepared: 1/21/97**				**Extraction Method: EPA 1311/3010**					
Matrix Spike	**0170372-MS1**		**P701276-04**							
Arsenic	1/30/97	5.00	ND	5.27	mg/l	50.0-150	105			
Barium	"	10.0	1.03	10.0	"	50.0-150	89.7			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

TCLP Metals per EPA 1311/6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)	**0170372-MS1**		**P701276-04**							
Cadmium	1/30/97	1.00	0.478	1.48	mg/l	50.0-150	**100**			
Chromium	"	5.00	0.0410	4.55	"	50.0-150	**90.2**			
Lead	"	5.00	1.94	6.84	"	50.0-150	**98.0**			
Selenium	"	1.00	ND	0.990	"	50.0-150	**99.0**			
Batch: 0170556	**Date Prepared: 1/20/97**				**Extraction Method: EPA 1311/3010**					
Blank	**0170556-BLK1**									
Silver	1/30/97			ND	mg/l	0.0100				
LCS	**0170556-BS1**									
Silver	1/30/97	2.00		1.66	mg/l	50.0-150	83.0			
Matrix Spike	**0170556-MS1**		**P701276-04**							
Silver	1/30/97	2.00	ND	1.71	mg/l	50.0-150	**85.5**			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST		Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997		Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd		Reported:	2/3/97 10:14

Polychlorinated Biphenyls per EPA Method 8081/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0170477	**Date Prepared: 1/28/97**				**Extraction Method: EPA 3550**					
Blank	**0170477-BLK1**									
Aroclor 1016	1/29/97			ND	mg/kg dry	0.050				
Aroclor 1221	"			ND	"	0.100				
Aroclor 1232	"			ND	"	0.050				
Aroclor 1242	"			ND	"	0.050				
Aroclor 1248	"			ND	"	0.050				
Aroclor 1254	"			ND	"	0.050				
Aroclor 1260	"			ND	"	0.050				
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*37.3*	"	*74.0-129*	*112*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*40.7*	"	*66.0-142*	*122*			
LCS	**0170477-BS1**									
Aroclor 1016	1/29/97	0.333		0.331	mg/kg dry	60.0-135	99.4			
Aroclor 1260	"	0.333		0.373	"	62.0-147	112			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*37.3*	"	*74.0-129*	*112*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*39.7*	"	*66.0-142*	*119*			
Matrix Spike	**0170477-MS1**		**P701232-04**							
Aroclor 1016	1/30/97	0.393	ND	0.304	mg/kg dry	60.0-149	**77.4**			
Aroclor 1260	"	0.393	ND	0.382	"	70.0-137	**97.2**			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*39.3*		*32.4*	"	*74.0-129*	*82.4*			
Surrogate: Decachlorobiphenyl	"	*39.3*		*38.3*	"	*66.0-142*	*97.5*			
Matrix Spike Dup	**0170477-MSD1**		**P701232-04**							
Aroclor 1016	1/30/97	0.393	ND	0.315	mg/kg dry	60.0-149	**80.2**	50.0	**3.55**	
Aroclor 1260	"	0.393	ND	0.397	"	70.0-137	**101**	50.0	**3.83**	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*39.3*		*34.5*	"	*74.0-129*	*87.8*			
Surrogate: Decachlorobiphenyl	"	*39.3*		*39.7*	"	*66.0-142*	*101*			

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

PN

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Schnitzer Steel Products Company	Project:	ASR TEST	Sampled:	1/16/97
12005 N. Burgard	Project Number:	PO #28997	Received:	1/21/97
Portland, OR 97203	Project Manager:	Tim Todd	Reported:	2/3/97 10:14

Notes and Definitions

#	Note
1	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Philip Nerenberg, Laboratory Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

Oregon Waste Systems, Inc.
Columbia Ridge Landfill & Recycling Center
18177 Cedar Springs Lane
Arlington, Oregon 97812
541/454-2030 • FAX: 541/454-3312

A Waste Management Company

January 9, 1998

Gerry Preston
Oregon Department of Environmental Quality
Eastern Region
400 E. Scenic Drive
The Dalles, OR. 97053

RE: Results from Schnitzer Steel's Sampling and Analysis of Auto Shredding Residue

Dear Mr. Preston:

In accordance with Condition 6 of your September 18, 1995 approval letter, attached please find the test results and statistical summary for Schnitzer Steel's automobile shredder residue for the previous two years. Also attached is a letter from Schnitzer Steel dated December 30, 1997, which accompanied the test results.

As indicated by Mr. Timothy Todd, of Schnitzer Steel Products Co., the most recent sampling of the shredder residue, conducted on August 25 and December 8, 1997, was performed in accordance with Schnitzer Steel's May 1995 Sampling and Analysis Plan and statistically evaluated using EPA's "Scrap Metal Shredder Sampling Guidance Document" issued in August 1993. Based on the statistical summary provided in Table 1 the analysis demonstrated a 95% confidence level for cadmium, lead, and PCB concentrations, which are below the regulatory levels for the respective contaminants. In addition, the analysis indicates that the average concentration of the contaminants is below the cut-off value.

If you have any questions regarding this submittal or if I can be of further assistance please call me or Samir Jiries at (541) 454-2643.

Sincerely
Waste Management Disposal Services of Oregon, Inc.

Lee Weber
Compliance Manager

cc: Tim Davison (DEQ)
Ken Lucas (DEQ)
Wayne Thomas (DEQ)
Samir Jiries
Steve Seed
Timothy R. Todd (Schnitzer)

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 269876 FAX (503) 286-6948

December 30, 1997

Mr. Gary Fisher
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: August and December 1997 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on August 25 and December 8, 1997, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Longview, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 3 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. Copies of laboratory reports for the August and December 1997 samples are attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	12/97	ND[b]	0.9	0.14	0.04	1.53	ND	ND	ND	NA[c]
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL[d]		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1[f]
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
5		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
6		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.05	0.50	0.01	0.01	0.2	0.0001	0.1	0.01	0.1
Average		0.05	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL[d]		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.00	0.26	0.01	33.85

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.2[c]	0.25	0.1	5.0
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.83

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[b]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average			--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--		0.56	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[1]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4ASR		ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#9	8/94	ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS 9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
OVERALL:										
Average		--	--	0.33	--	1.93	--	--	--	13.45
Median		--	--	0.35	--	1.56	--	--	--	11.55
Variance		--	--	0.03	--	3.45	--	--	--	122.37
Standard Dev.		--	--	0.18	--	1.86	--	--	--	11.06
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.29	--	1.48	--	--	--	9.90
UCL		--	--	0.37	--	2.39	--	--	--	16.99
Cut-off Value		--	--	1.04	--	5.38	--	--	--	52.94

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] Reported in ug/kg.
[f] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.
[g] Not reported by the analytical laboratory.

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 289875 FAX (503) 286-6948

December 30, 1997

Mr. Gary Fisher
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: August and December 1997 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on August 25 and December 8, 1997, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Longview, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 3 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. Copies of laboratory reports for the August and December 1997 samples are attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	12/97	ND[b]	0.9	0.14	0.04	1.53	ND	ND	ND	NA[c]
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL[d]		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1[f]
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
5		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
6		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.05	0.50	0.01	0.01	0.2	0.0001	0.1	0.01	0.1
Average		0.05	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL[d]		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.00	0.26	0.01	33.85

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.2[e]	0.25	0.1	5.0
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.83

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[g]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4ASR		ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#9	8/94	ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
S-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
OVERALL:										
Average		--	--	0.33	--	1.93	--	--	--	13.45
Median		--	--	0.35	--	1.56	--	--	--	11.55
Variance		--	--	0.03	--	3.45	--	--	--	122.37
Standard Dev.		--	--	0.18	--	1.86	--	--	--	11.06
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.29	--	1.48	--	--	--	9.90
UCL		--	--	0.37	--	2.39	--	--	--	16.99
Cut-off Value		--	--	1.04	--	5.38	--	--	--	52.94

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] Reported in ug/kg.
[f] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.
[g] Not reported by the analytical laboratory.

Columbia Analytical Services INC.

December 29, 1997

Service Request No: K9709402

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97210

Re: SSP-IT

Dear Tim:

Enclosed are the results of the rush sample(s) submitted to our laboratory on December 18, 1997. For your reference, these analyses have been assigned our service request number K9709402.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/td

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Schnitzer Steel Products Co.
Project: SSP-IT
Sample Matrix: Solid

Service Request: K9709402
Date Collected: 12/8/97
Date Received: 12/18/97
Date TCLP Performed: 12/22/97
Date Extracted: 12/23/97

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9709402-001	K9709402-002	K9709402-003
			Date Analyzed:	12/23/97	12/23/97	12/23/97
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010A	0.1	5	ND	ND	ND
Barium	3010A/6010A	0.5	100	0.9	1.6	2.34
Cadmium	3010A/6010A	0.01	1	0.14	0.23	0.14
Chromium	3010A/6010A	0.05	5	0.04	0.06	0.04
Lead	3010A/6010A	0.05	5	1.53	1.71	1.48
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010A	0.1	1	ND	ND	ND
Silver	3010A/6010A	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 12/24/97

TCLP/102194
09402ICP.EA1 - Sample 12/24/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9709402
Project:	SSP-IT	**Date Collected:**	12/8/97
Sample Matrix:	Solid	**Date Received:**	12/18/97
		Date TCLP Performed:	12/22/97
		Date Extracted:	12/23/97

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	Method Blank
			Lab Code:	K9709402-004	K9709402-MB
			Date Analyzed:	12/23/97	12/23/97
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010A	0.1	5	ND	ND
Barium	3010A/6010A	0.5	100	1.36	ND
Cadmium	3010A/6010A	0.01	1	0.25	ND
Chromium	3010A/6010A	0.05	5	0.06	ND
Lead	3010A/6010A	0.05	5	2.02	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010A	0.1	1	ND	ND
Silver	3010A/6010A	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 12/24/97

TCLP/102194
09402ICP.EA1 - Sample (2) 12/24/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9709402
Project:	SSP-IT	**Date Collected:**	12/8/97
Sample Matrix:	Solid	**Date Received:**	12/18/97
		Date Extracted:	12/19/97

Polychlorinated Biphenyls (PCBs)
EPA Methods 3550B/8080A
Units: mg/Kg (ppm)
As Received Basis

	Sample Name:	**5**	**6**	**Method Blank**
	Lab Code:	K9709402-005(D)	K9709402-006(D)	K971219-SB
	Date Analyzed:	12/20/97	12/20/97	12/20/97
Analyte	**MRL**			
Aroclor 1016	0.1	<2.5	<2.5	ND
Aroclor 1221	0.1	<2.5	<2.5	ND
Aroclor 1232	0.1	<2.5	<2.5	ND
Aroclor 1242	0.1	21	25	ND
Aroclor 1248	0.1	<2.5	<2.5	ND
Aroclor 1254	0.1	5.6	3.9	ND
Aroclor 1260	0.1	<2.5	<2.5	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 12/23/97

3S22/120594
09402SVG.AC1 - 1-3 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9709402
Project:	SSP-IT	**Date Collected:**	12/8/97
Sample Matrix:	Solid	**Date Received:**	12/18/97
		Date TCLP Performed:	12/22/97
		Date Extracted:	12/23/97
		Date Analyzed:	12/23/97

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 1
Lab Code: K9709402-001

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	5.0	100
Barium	5	0.9	6.0	102
Cadmium	1	0.14	1.12	98
Chromium	5	0.04	4.85	96
Lead	5	1.53	6.30	95
Mercury	0.01	ND	0.011	110
Selenium	1	ND	1.1	110
Silver	1	ND	0.93	93

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 12/24/97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9709402
Project:	SSP-IT	**Date Collected:**	12/8/97
Sample Matrix:	Solid	**Date Received:**	12/18/97
		Date Extracted:	12/19/97
		Date Analyzed:	12/20/97

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3550B/8080A

Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
5	K9709402-005	82
6	K9709402-006	95
Method Blank	K971219-SB	88

CAS Acceptance Limits: 54-144

Approved By: _____ Date: 12/22/97

SUR1/120594
09402SVG.AC1 - SUR1 12/23/97

Columbia Analytical Services INC.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

DATE 12/18/97 PAGE 1 OF 1

PROJECT NAME SSP-IT #

PROJECT MANAGER Tim Todd

COMPANY/ADDRESS Schnitzer Steel
PO Box 10047 Portland, OR 97269

FAX 503/286-6948 PHONE 503/286-6944

SAMPLERS SIGNATURE Tim Todd

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐	Pesticides 608/8080 ☐ PCBs	Total Petroleum Hydrocarbons EPA418.1 ☐ OR418.1 ☐ WA418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH-HCID ☐ WA-HCID ☐ OR-HCID ☐	TCLP Metals ☐	Semi Pest/ VOA ☐ Herb ☐ Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650AO ☐			REMARKS
1	12/8			Solid	1									X								
2	↓			↓	1									X								
3					1									X								
4					1									X								
5					1				X													
6	↓			↓	1				X													

RELINQUISHED BY:
Signature: Timothy K. Todd
Printed Name: Timothy Todd
Firm: SSP
Date/Time: 12/18/97 10:00

RECEIVED BY:
Signature: Lori Eck
Printed Name: Lori K. Hawn
Firm: CAS
Date/Time: 121897 1520

TURNAROUND REQUIREMENTS
X 24 hr ___ 48 hr. ___ 5 day
___ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No: K97-9402

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
Rush!!

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

SCHN00244310

MAIL

Columbia Analytical Services inc.

September 24, 1997

Service Request No: K9706189

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97210

Re: Schnitzer Steel Products, Inc.

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on August 27, 1997. For your reference, these analyses have been assigned our service request number K9706189.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/bf

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9706189
Project:	Schnitzer Steel Products, Inc.	**Date Collected:**	8/25/97
Sample Matrix:	Solid	**Date Received:**	8/27/97
		Date Extracted:	9/8/97

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A
Units: mg/Kg (ppm)
Dry Weight Basis

	Sample Name:	**1**	**2**	**Method Blank**
	Lab Code:	K9706189-001(D)	K9706189-002(D)	K970908-SB
	Date Analyzed:	9/11/97	9/11/97	9/10/97
Analyte	**MRL**			
Aroclor 1016	0.1	<2	<1	ND
Aroclor 1221	0.1	<2	<1	ND
Aroclor 1232	0.1	<2	<1	ND
Aroclor 1242	0.1	41	17	ND
Aroclor 1248	0.1	<20	<8	ND
Aroclor 1254	0.1	12	6	ND
Aroclor 1260	0.1	4	2	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 9-24-97

3822/120594
06189SVO.J81 - 1.3.MB 9/24/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9706189
Project:	Schnitzer Steel Products Inc.	**Date Collected:**	8/25/97
Sample Matrix:	Solid	**Date Received:**	8/27/97
		Date TCLP Performed:	9/8/97
		Date Extracted:	9/9/97

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	3	4	6
			Lab Code:	K9706189-003	K9706189-004	K9706189-005
			Date Analyzed:	9/13/97	9/13/97	9/13/97
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010A	0.1	5	ND	ND	ND
Barium	3010A/6010A	0.5	100	1.4	1.4	1.7
Cadmium	3010A/6010A	0.01	1	0.37	0.24	0.38
Chromium	3010A/6010A	0.01	5	0.02	0.02	0.03
Lead	3010A/6010A	0.05	5	1.52	0.92	2.38
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010A	0.1	1	ND	ND	ND
Silver	3010A/6010A	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: JC Date: 9/15/97

TCLP/102194
06189(CP.JC1 - Sample 9/15/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9706189
Project:	Schnitzer Steel Products Inc.	**Date Collected:**	8/25/97
Sample Matrix:	Solid	**Date Received:**	8/27/97
		Date TCLP Performed:	9/8/97
		Date Extracted:	9/9/97

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	**5**	**Method Blank**
			Lab Code:	K9706189-006	K9706189-MB
			Date Analyzed:	9/13/97	9/13/97
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010A	0.1	5	ND	ND
Barium	3010A/6010A	0.5	100	1.5	ND
Cadmium	3010A/6010A	0.01	1	0.4	ND
Chromium	3010A/6010A	0.01	5	0.01	ND
Lead	3010A/6010A	0.05	5	1.53	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010A	0.1	1	ND	ND
Silver	3010A/6010A	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 9/15/97

TCLP/102194
06189ICP.JC1 - Sample (2) 9/15/97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9706189
Project:	Schnitzer Steel Products Inc.	**Date Collected:**	8/25/97
Sample Matrix:	Solid	**Date Received:**	8/27/97
		Date TCLP Performed:	9/8/97
		Date Extracted:	9/9/97
		Date Analyzed:	9/13/97

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 3
Lab Code: K9706189-003

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	4.7	94
Barium	5	1.4	5.9	90
Cadmium	1	0.37	1.21	84
Chromium	5	0.02	4.42	88
Lead	5	1.52	5.77	85
Mercury	0.01	ND	0.010	100
Selenium	1	ND	0.9	90
Silver	1	ND	0.88	88

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 9/15/97

TC[illegible] - Spike 9/15/97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9706189
Project:	Schnitzer Steel Products, Inc.	**Date Collected:**	8/25/97
Sample Matrix:	Solid	**Date Received:**	8/27/97
		Date Extracted:	9/8/97
		Date Analyzed:	9/10/97

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A

Sample Name	Lab Code	Percent Recovery Decachlorobiphenyl
1	K9706189-001	75
2	K9706189-002	71
Method Blank	K970908-SB	88

CAS Acceptance Limits: 54-144

Approved By: _____ Date: 9-24-97

SUR.1/120594
061898VO.181 - SUR.1 9/24/97

Page No.: 00007

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services Inc. 1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

DATE August 26, 1997 PAGE 1 OF 1

PROJECT NAME Schnitzer Steel Products, Inc.
PROJECT MANAGER Tim Todd
COMPANY/ADDRESS 3200 NW Yeon Ave. • P.O. Box 10047
Portland, Oregon 97210
PHONE (503) 286-6944
SAMPLERS SIGNATURE Bob Gooch

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA418.1 ☐ OR418.1 ☐ WA418.1 ☐	TPH/Gas/BTEX 5030/8015 Modified Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/HCID ☐ WA/HCID ☐ OR/HCID ☐	TCLP Metals ☒ VOA ☐ Semi Pest/ VOA ☐ Herb ☐	Metals (total or dissolved) List Below	Cyanide	pH Cond. Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH3-N, COD, Total-P, TKN, TOC (TOX) 9020 ☐ (AOX) 1650 ☐				REMARKS
1	8/25		1	ASR	1				X														
2	8/25		2	ASR	1				X														
3	8/25		3	ASR	1									X									
4	8/25		4	ASR	1									X									
5	8/25		5	ASR	1									X									
6	8/25			ASR	1									X									

RELINQUISHED BY:
Signature
Printed Name
Firm
August 26, 1997
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm CAS
8-26-97 4:00
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
X Standard (10-15 working days)
___ Provide Verbal Preliminary Results
X Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No: K9706185

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature Kimberly Olson
Printed Name KIMBERLY OLSON
Firm CAS
27 Aug 97 - 10:00
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
TCLP Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver, Mercury
EPA 6000, 7000 Series Methods

Label one of the #4's as #6 per H.B. 082697. KKM

* RECEIVED 2 LABELLED -4- ; DID NOT RECEIVE 4 *

SCHN00244318

****
*** ACTIVITY REPORT ***
****

TRANSMISSION OK

TX/RX NO.	0882
CONNECTION TEL	915414543282
CONNECTION ID	
START TIME	06/26 07:56
USAGE TIME	07'35
PAGES	10
RESULT	OK

SCHNITZER STEEL PRODUCTS CO.

12005 N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

SCRAP DIVISION
FAX TRANSMITTAL COVER SHEET

TO: Gary Fisher DATE: June 26, 1998

NUMBER OF PAGES BEING SENT

FROM: Jim Jakubiak (INCLUDING COVER PAGE) 10

If message is incomplete or illegible, please call (503) 286-5771.

If you want to send a Fax to Schnitzer Steel, our Fax Number is (503) 286-6948.

RE: Attached is the landfill's recertification form and the analytical report from the most recent waste profile sampling event.

The new profile form is currently being prepared and will

SCHNITZER STEEL PRODUCTS CO.

1[illegible] N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

SCRAP DIVISION
FAX TRANSMITTAL COVER SHEET

TO: Gary Fisher DATE: June 26, 1998

NUMBER OF PAGES BEING SENT

FROM: Jim Jakubiak (INCLUDING COVER PAGE) 10

If message is incomplete or illegible, please call (503) 286-5771.

If you want to send a Fax to Schnitzer Steel, our Fax Number is (503) 286-6948.

RE: Attached is the landfill's recertification form and the analytical report from the most recent waste profile sampling event.

The new profile form is currently being prepared and will be faxed within the hour. J.J.

WASTE PROFILE # 090302

COLUMBIA RIDGE LANDFILL GENERATOR'S RECERTIFICATION

1. Is the waste represented by this waste profile sheet a "Hazardous Waste" as defined by USEPA, Canadian, Mexican and/or state/province regulation, in the location where generated or ultimately managed? ☐ Yes ☒ No

2. Does the waste represented by this waste profile sheet contain regulated radioactive material or regulated concentration of Polychlorinated Biphenyls (PCB's)? ☐ Yes ☒ No

3. Does this waste profile sheet and all attachments contain true and accurate descriptions of the waste material? ☒ Yes ☐ No

4. Has all relevant information within the possession of the Generator regarding known or suspected hazards pertaining to the waste been disclosed to the Contractor? ☒ Yes ☐ No

5. Is the analytical data attached hereto derived from testing a representative sample in accordance with 40 CFR 261.20 (c) or equivalent rules? ☒ Yes ☐ No

6. Will all changes that occur in the character of the waste be identified by the Generator and disclosed to the Contractor prior to providing the waste to the Contractor? ☒ Yes ☐ No

Has the process generating the waste been changed for the above referenced profile? ☐ Yes ☒ No

Generator Signature: J. Jakubiak for Tim Todd Title: Environmental Administrator

Name (Type or Print): Jim Jakubiak for Tim Todd

Company Name: Schnitzer Steel Products Date: June 26, 1998

Management Method: ☒ Landfill ☐ Solidify ☐ Bioremediation ☐ Other (Specify) Material is used for daily cover and is considered a beneficial product.

Supplemental Information: Analytical data from ASR sampling event provided as an attachment (dated May 28, 1998)

Precautions, Special Handling Procedures, or limitation on Approval:

Special Waste Decision: ☐ Approved ☐ Disapproved

Special Waste Approvals Person Signature:

Date:

Columbia Analytical Services INC.
An Employee-Owned Company

May 28, 1998

Service Request No: K9803034

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97210

Re: SSP-ASR

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on May 13, 1998. For your reference, these analyses have been assigned our service request number K9803034.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/jcb

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9803034-001	K9803034-002	K9803034-003
			Date Analyzed:	5/21/98	5/21/98	5/21/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/200.8	0.1	5	ND	ND	ND
Barium	3010A/200.8	0.5	100	1.7	1.4	1.0
Cadmium	3010A/200.8	0.01	1	0.32	1.06	0.34
Chromium	3010A/200.8	0.01	5	ND	0.06	0.11
Lead	3010A/200.8	0.01	5	0.42	0.54	1.71
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/200.8	0.1	1	ND	ND	ND
Silver	3010A/200.8	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 5/26/98

TCLP/102194
03034ICP.EA1 - Sample 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	**Method Blank**
			Lab Code:	K9803034-004	K9803034-MB
			Date Analyzed:	5/21/98	5/21/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/200.8	0.1	5	ND	ND
Barium	3010A/200.8	0.5	100	1.2	ND
Cadmium	3010A/200.8	0.01	1	0.25	ND
Chromium	3010A/200.8	0.01	5	ND	ND
Lead	3010A/200.8	0.01	5	0.61	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/200.8	0.1	1	ND	ND
Silver	3010A/200.8	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 5/26/98

TCLP/102194
03034ICP.EA1 - Sample (2) 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date Extracted:	5/15/98

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A
Units: mg/Kg (ppm)
As Received Basis

	Sample Name:	5	6	**Method Blank**
	Lab Code:	K9803034-005(D)	K9803034-006(D)	K980515-MB
	Date Analyzed:	5/27/98	5/27/98	5/27/98
Analyte	**MRL**			
Aroclor 1016	0.1	<1	<1	ND
Aroclor 1221	0.1	<1	<1	ND
Aroclor 1232	0.1	<1	<1	ND
Aroclor 1242	0.1	6	14	ND
Aroclor 1248	0.1	<1	<1	ND
Aroclor 1254	0.1	<1	<1	ND
Aroclor 1260	0.1	<1	<1	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 5/27/98

3S22/120594
03034SVG.AY1 - 1-MB 5/27/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98
		Date Analyzed:	5/21/98

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 4
Lab Code: K9803034-004

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	5.8	116
Barium	5	1.2	6.7	110
Cadmium	1	0.25	1.17	92
Chromium	5	ND	5.48	110
Lead	5	0.61	5.67	101
Mercury	0.01	ND	0.01	100
Selenium	1	ND	1.2	120
Silver	1	ND	0.87	87

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date Extracted:	5/15/98
		Date Analyzed:	5/27/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A

Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
5	K9803034-005	77
6	K9803034-006	64
Method Blank	K980515-MB	84

CAS Acceptance Limits: 54-144

Approved By: _____ Date: 5/27/98

SUR1/120594
03034SVG.AY1 - SUR1 5/27/98

Columbia Analytical Services INC.

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 5/13/98 PAGE 1 OF 1

PROJECT NAME SSP-ASR #

PROJECT MANAGER Tim Todd

COMPANY/ADDRESS SSP / PO Box 10017

FAX PHONE

SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA418.1 ☐ OR418.1 ☐ WA418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/HCID ☐ WA/HCID ☐ OR/HCID ☐	TCLP Metals ☐	Semi Pest/ VOA ☐ Herb ☐ Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH3-N, COD, Total-P, TKN, TOC	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650A ☐			REMARKS
1	5/4		1	Solid	1									X								
2			2		1									X								
3			3		1									X								
4			4		1									X								
5			5		1				X													
6			6		1				X													

00008

RELINQUISHED BY:	RECEIVED BY:	TURNAROUND REQUIREMENTS	REPORT REQUIREMENTS	INVOICE INFORMATION:	SAMPLE RECEIPT:
Signature: Timothy K. Todd	Signature: [illegible]	___ 24 hr ___ 48 hr. ___ 5 day	X I. Routine Report	P.O.#:	Shipping VIA:
Printed Name: Timothy Todd	Printed Name: Amy Gowan	X Standard (10-15 working days)	___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)	Bill To:	Shipping #:
Firm: SSP	Firm: CAS	___ Provide Verbal Preliminary Results	___ III. Data Validation Report (includes All Raw Data)		Condition:
Date/Time: 5/13/98	Date/Time: 5-14-98 9:00	___ Provide FAX preliminary Results	___ IV. CLP Deliverable Report		Lab No: 3034
		Requested Report Date ___			

RELINQUISHED BY:	RECEIVED BY:	SPECIAL INSTRUCTIONS/COMMENTS:
Signature	Signature	
Printed Name	Printed Name	
Firm	Firm	
Date/Time	Date/Time	

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

SCHN00244330

Columbia Ridge Landfill & Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812
fax: (541) 454 - 3343
Gary Fisher
(541) 454 - 3282

TO: Jim Jakubiak

FROM: Kacie

PHONE #: 541-454-3310

DATE: 6/26

MESSAGE: Copy of profile

OF PAGES: 3 (including this page)

Printed on recycled paper.

Recertification

GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

Waste Profile Sheet Code: 090302

This form is to be used to comply with the requirements of a waste agreement.

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED 4880491

(Shaded Areas For Contractor Use Only)

Decision Expiration Date: 6-26-98

Contractor Sales Rep#: _____

Service Agr. Renewal Date: / /

A. WASTE GENERATOR INFORMATION

1. Generator Name: Schnitzer Steel Products
2. SIC Code: _____
3. Facility Address (site of waste generation): 12005 N. Burgard Rd
4. Generator City, State/Province: Portland OR
5. Zip/Postal Code: 97210
6. Generator USEPA/Federal ID #: _____
7. State/Province ID #: _____
8. Technical Contact: _____
9. Phone: ( ) _____ - _____

B. WASTE STREAM INFORMATION (See Instructions)

1. Name of Waste: Shredder Fluff - Auto Fluff
2. Process Generating Waste: Shredding Operations
3. Annual Amount/Units: 42,000 LT
4. Type A ☒ Type B ☐
5. Special Handling Instructions/Supplemental Information: _____
6. Incidental Waste Types and Amounts: _____

C. TRANSPORTATION INFORMATION

1. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Sludge ☒ Bulk Solid ☐ Drum/Box ☐ Other _____
2. Supplemental Shipping Information: _____
3. Is this a DOT hazardous material? ☒ No ☐ Yes (If yes, complete 4, 5 & 6)
4. Hazard Class/ID #: _____
5. Reportable Quantity/Units (lb/kg): _____
6. Shipping Name: _____

D. TECHNICAL MANAGER DECISION (Check One) ☒ APPROVED ☐ DISAPPROVED ☐ Check if additional information is attached

If Disapproved, Explain: _____

If Approved, Continue.

1. Management Method(s) _____
2. Precautions, Conditions, or Limitations on Approval: Material may be used as daily cover. Analytical sampling must be submitted by Schnitzer at frequency determined by DEQ
3. For Type A Wastes, Laboratory Analysis of a Representative Sample Was: ☐ Waived ☒ Attached

If waived, explain why: _____

4. List Non-WMI Facility that is Approved to Manage this Waste: _____ Date: _____

Tech. Mgr. Signature: [signature] Name (Print): G. FISHER Date: 6-26-96

E. MANAGEMENT FACILITY INFORMATION / DECISION

1. Proposed Management Facility: Columbia Ridge Landfill & Recycling Center
2. Proposed Intermediate Transfer Facility: _____
3. Transporter: _____
4. Management Facility Gen. Mgr. Decision (Check One) ☒ APPROVED ☐ DISAPPROVED

Disapproved, Explain: _____

If Approved, List Precautions, Conditions, or Limitations on Approval: _____

General Mgr. Signature: SHSeed Name (Print): SH SEED Date: 7/1/96

Turn Page and Complete Side 2 (If Type B Special Waste, only complete Part J of Side 2)

Printed on Recycled Paper

GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

F. PHYSICAL CHARACTERISTICS OF WASTE (See Instructions)

1. Color	2. Does the waste have a strong incidental odor?	3. Physical State @ 70°F/21°C:	4. Layers	5. Specific Gravity	6. Free Liquids:
Brown	☒ No ☐ Yes; if so, describe:	☒ Solid ☐ Semi-Solid ☐ Liquid ☐ Powder ☐ Other:	☐ Multi-layered ☐ Bi-layered ☒ Single Phased	Range -	☐ Yes ☐ No Volume: %

7. pH: ☐ ≤2 ☐ > 2-4 ☐ 4-7 ☐ 7 ☐ 7-10 ☐ 10- <12.5 ☐ ≥12.5 ☐ Range ☐ NA

8. Flash Point: ☐ None ☐ <140°F/60°C ☐ 140 - 199°F/60 - 93°C ☐ ≥200°F/93°C ☐ Closed Cup ☐ Open Cup

G. CHEMICAL COMPOSITION

	RANGE (MIN-MAX)
1. See Attached Analytical Results	- %
	- %
	- %
	- %
	- %
	- %
	- %
	- %
	- %
Total:	%

2. Does the waste contain any of the following? (provide concentration if known):

	NO	or	LESS THAN	or	ACTUAL
PCBs	☐		☒ < 50 ppm		ppm
Cyanides	☒		☐ < 30 ppm		ppm
Sulfides	☒		☐ < 500 ppm		ppm

Please note: Unless analytical results are attached, the chemical composition identification should include, at a minimum, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Pesticides, Herbicides, and any other TCLP constituents that may be present in the waste. The total composition must be greater than or equal to 100%. (.0001% = 1 ppm or 1 mg/l)

3. Indicate method used to determine composition (if provided): ☒ TCLP ☐ Total ☐ Other:

H. SAMPLING SOURCE (e.g., Drum, Lagoon, Pit, Pond, Tank, Vat)

I. REPRESENTATIVE SAMPLE CERTIFICATION

1. Print Sampler's Name: 2. Sample Date:
3. Sampler's Title:
4. Sampler's Employer (if other than Generator):

The sampler's signature certifies that any sample submitted is representative of the waste described above pursuant to 40 CFR 261.20(c) or equivalent rules.

5. Sampler's Signature

J. GENERATOR CERTIFICATION

By signing this profile sheet, the Generator cetifies:

1. This waste is not a "Hazardous Waste" as defined by USEPA or Canadian Federal regulation and/or the state/province.
2. This waste does not contain regulated radioactive materials or regulated concentrations of PCB's (Polychlorinated Biphenyls).
3. The unshaded portions of this sheet and the attachments contain true and accurate descriptions of the waste material. All relevant information regarding known or suspected hazards in the possession of the Generator has been disclosed.
4. The Generator has read and understands the Contractor's Definition of Special Waste included in Part B.5. of the attached instructions form. All types and amounts of special wastes provided in incidental amounts have been identified in section B.6. of this form. The analytical data presented herein or attached hereto were derived from testing a representative sample taken in accordance with 40 CFR 261.20(c) or equivalent rules.
6. If any changes occur in the character of the waste, the Generator shall notify the Contractor prior to providing the waste to the Contractor.

7. Signature Timothy R. Todd 8. Title Environmental Administrative

9. Name (Type or Print) Timothy R. Todd 10. Date 6/19/96

****
*** ACTIVITY REPORT ***
****

TRANSMISSION OK

TX/RX NO.	0885
CONNECTION TEL	915414543282
CONNECTION ID	
START TIME	06/26 08:26
USAGE TIME	04'21
PAGES	6
RESULT	OK

SCHNITZER STEEL PRODUCTS CO.

12005 N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

SCRAP DIVISION
FAX TRANSMITTAL COVER SHEET

TO: Gary Fisher DATE: June 26, 1998

NUMBER OF PAGES BEING SENT

FROM: Jim Jakobiak (INCLUDING COVER PAGE) 6

If message is incomplete or illegible, please call (503) 286-5771.

If you want to send a Fax to Schnitzer Steel, our Fax Number is (503) 286-6948.

RE: Attached is the "Generator's Waste Profile Sheet" you requested. Please call if you need additional information at (503) 286-6944.

Waste Management Industrial Services
14240 Interurban Avenue South, STE 244
Tukwila, WA 98168

Fax Cover Sheet

DATE:	June 9, 1998	**TIME:**	2:31 PM
TO:	Jim Jakubiak	**PHONE:** **FAX:**	
FROM:	Vikki Anderson Waste Management	**PHONE:** **FAX:**	(800) 843-3604 or DID (206) 433-7133 (206) 241-6061
RE:			
CC:			

Number of pages including cover sheet: 7
Message

Hi Jim and Tim—

I apologize I forgot to send this earlier but please find the recert paperwork for the WPS# 090302 (auto fluff). Please make any changes to the profile and complete questions 1-7 and sign, title, and date.

Please fax Symantha or myself the profile sheet, the recertification form, and analytical at (206) 241-6061

If you have nay questions, please call me at (800) 843-3604.

Thank You

Vikki

SCHNITZER STEEL PRODUCTS CO.

1[illegible] N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

SCRAP DIVISION
FAX TRANSMITTAL COVER SHEET

TO: Gary Fisher

DATE: June 26, 1998

NUMBER OF PAGES BEING SENT (INCLUDING COVER PAGE) 6

FROM: Jim Jakubiak

If message is incomplete or illegible, please call (503) 286-5771.

If you want to send a Fax to Schnitzer Steel, our Fax Number is (503) 286-6948.

RE: Attached is the "Generator's Waste Profile Sheet" you requested. Please call if you need additional information at (503) 286-6944.

Waste Management, Inc.

Date Printed 05/09/98

GENERATOR'S WASTE PROFILE SHEET

Profile # CRL 090302

( ) Check here if this is a Recertification LOCATION OF ORIGINAL CRM OF THE NORTHWEST-ARLINGTON

GENERAL INFORMATION

1. Generator Name: SCHNITZER STEEL PRODUCTS INC Generator USEPA ID: ORD099155574

2. Generator Address: 12005 N BURGARD ST Billing Address: "same as previous profile"
(X) Same

PORTLAND OR 97203-6422

3. Technical Contact/Phone: TIMOTHY R. TODD

4. Alternate Contact/Phone: Billing Contact/Phone:

PROPERTIES AND COMPOSITION

5. Process Generating Waste: SHREDDING OPERATIONS

6. Waste Name: SHREDDER FLUFF-AUTO FLUFF

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes ( ) No (X)

B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U):

State Waste Codes:

8. Physical State @ 70F: A. Solid(X) Liquid( ) Both( ) Gas( ) B. Single Layer (X) Multilayer ( ) C. Free liq. range 0 to 0%

9A. pH: Range _____ or Not applicable (X) B. Strong Odor ( ),describe

10. Liquid Flash Point: < 73F ( ) 73-99F ( ) 100-139F ( ) 140-199F ( ) >= 200F ( ) N.A. (X) Closed Cup (X) Open Cup ( )

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description
SHREDDER FLUFF-AUTO FLUFF	to 100	%
MATERIAL MAY BE USED AS DAILY COVER. ANALYTICAL	to	
SAMPLING MUST BE SUBMITTED BY SCHNITZER ON	to	
FREQUENCY DETERMINED BY OR DEQ.	to	
** EXP DATE 06-26-98 **	to	
	to	
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	100.000000	

12. OTHER: PCBs if yes, concentration < 50 ppm, PCBs regulated by 40 CFR 761 ( ). Pyrophoric ( ) Explosive ( ) Radioactive ( ) Benzene if yes, concentration _____ ppm. NESHAP ( ) Shock Sensitive ( ) Oxidizer ( ) Carcinogen ( ) Infectious ( ) Other

13. If waste subject to the land ban & meets treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (X) Bulk Liquid ( ) Drum ( ) Type/Size: BULK Other

15. ANTICIPATED ANNUAL VOLUME: 42000 Units: POUNDS Shipping Frequency: YEAR

SAMPLING INFORMATION Sample Tracking Number: 4880491

16a. Sample source (drum, lagoon, pond, tank, vat, etc.):

Date Sampled: _____ Sampler's Name/Company:

16b. Generator's Agent Supervising Sampling: 17. ( ) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize WMI to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile 090302 TIMOTHY R. TODD ENVIRONMENTAL ADMINISTRATIVE 6/19/96
Name and Title Date

SCHN00244337

Date Printed 06/09/98

Profile #
CRL 090302

This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:
___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: X Yes, Soil: _ Yes, Debris: _

22. Specific Gravity Range: _____ to _____

23. Indicate the range of each: Units

Cyanides: _ None _____ to _____ _____ Type (free, total, amenable, etc.) _____

Cyanides: _ None _____ to _____ _____ Type (free, total, amenable, etc.) _____

Sulfides: _ None _____ to _____ _____ Type _____

Optional
Phenolics: _ None _____ to _____ _____

24. Identify the waste color VARIES _____, DOT physical state Solid _____,

Date Printed 06/09/98

Profile # CRL 090302

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION	26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)
TOTAL	RANGE
Beryllium as Be _____ ppm	A. Heat Value (Btu/lb): _____-_____
Potassium as K _____ ppm	B. Water: _____
Sodium as Na _____ ppm	C. Viscosity (cps): ____@____F _ 100 F _ 150 F
Bromine as Br _____ %	D. Ash: _____ %
Chlorine as Cl _____ %	E. Settleable solids: _____ %
Fluorine as F _____ %	F. Vapor Pressure @ STP (mm/Hg): ____
Sulfur as S _____ %	G. Is this waste a pumpable liquid? Yes _ No _
	H. Can this waste be heated to improve flow? Yes _ No _
	I. Is this waste soluble in water? Yes _ No _
	J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes _ No _

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes _ No X

B. Proper Shipping Name. . . . . .: NON-REGULATED PER 49 CFR

and Additional Description if required: _____

C. DOT Regulations: _____ Hazard Class: 00 Non-Regulated Mat. I.D. _____ Packing Group: ___

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): _____

E. Non-Bulk code ___ Bulk code ___

F. Special Provisions ___ ___ ___ ___ ___ ___

G. Labels Required _____ _____ _____

28. SPECIAL HANDLING INFORMATION

_____

_____

_____

_____

_ Material Safety Data Sheets Attached

29. OTHER INFORMATION

Material can be used as daily cover and is considered a beneficial product.

30. WASTE MANAGEMENT CERTIFICATION

Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 06/09/98

Profile # CEL 090302

OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

METALS	TCLP Information: Check only ONE for each constituent Use units: ppm, mg/l				TCLP Data	TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
						California List			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	Less Than	Regulated Level	Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd	X	1.0 mg/l		D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb	X	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

Date Printed 06/09/98

Profile # CRL 090302

OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethane	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

SCHNITZER STEEL PRODUCTS CO.

1S N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

Post-it® Fax Note 7671	Date 7/27 # of pages ▶ 14
To Brace	From Tim Todd
Co./Dept.	Co.
Phone #	Phone #
Fax #	Fax #

July 20, 1998

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: May 1998 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on May 13, 1998, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Longview, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 3 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of laboratory report is attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	5/98	ND[b]	1.7	0.32	ND	0.42	ND	ND	ND	NA[c]
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL[d]	0.1	0.50	0.01	0.05	0.05	0.001	0.0001	0.01	0.1[f]	0.1
Average	0.1	1.55	0.19	0.05 ?	1.69	0.001	0.0001	0.01	27.8	10
1	12/97	ND	0.9	0.14	0.04	1.53	ND	ND	ND	NA
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
5		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
6		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.05	0.50	0.01	0.01	0.2	0.0001	0.1	0.01	0.1
Average		0.05	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.0002	0.26	0.01	33.85
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.0002	0.25	0.1	5.0
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.83
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[g]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4ASR		ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#9	8/94	ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6
OVERALL:										
Average		--	--	0.34	--	1.87	--	--	--	13.29
Median		--	--	0.34	--	1.53	--	--	--	11.55
Variance		--	--	0.03	--	3.44	--	--	--	122.37
Standard Dev.		--	--	0.18	--	1.86	--	--	--	11.06
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.29	--	1.43	--	--	--	9.90
UCL		--	--	0.38	--	2.31	--	--	--	16.74
Cut-off Value		--	--	1.04	--	5.36	--	--	--	52.21

NOTE:

a PCBs are reported as the sum of all detected Aroclors.
b ND - Not detected at or above the method reporting limit.
c NA - Not analyzed.
d MRL - Method reporting limit.
e PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

May 28, 1998

Service Request No: K9803034

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97210

Re: SSP-ASR

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on May 13, 1998. For your reference, these analyses have been assigned our service request number K9803034.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/jcb

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9803034-001	K9803034-002	K9803034-003
			Date Analyzed:	5/21/98	5/21/98	5/21/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/200.8	0.1	5	ND	ND	ND
Barium	3010A/200.8	0.5	100	1.7	1.4	1.0
Cadmium	3010A/200.8	0.01	1	0.32	1.06	0.34
Chromium	3010A/200.8	0.01	5	ND	0.06	0.11
Lead	3010A/200.8	0.01	5	0.42	0.54	1.71
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/200.8	0.1	1	ND	ND	ND
Silver	3010A/200.8	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 5/26/98

TCLP/102194
03034ICP.EA1 - Sample 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	Service Request:	K9803034
Project:	SSP-ASR	Date Collected:	5/4/98
Sample Matrix:	Solid	Date Received:	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	Method Blank
			Lab Code:	K9803034-004	K9803034-MB
			Date Analyzed:	5/21/98	5/21/98
Analyte	EPA Method	MRL	Regulatory Limit*		
Arsenic	3010A/200.8	0.1	5	ND	ND
Barium	3010A/200.8	0.5	100	1.2	ND
Cadmium	3010A/200.8	0.01	1	0.25	ND
Chromium	3010A/200.8	0.01	5	ND	ND
Lead	3010A/200.8	0.01	5	0.61	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/200.8	0.1	1	ND	ND
Silver	3010A/200.8	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 5/26/98

TCLP/102194
0303-ICP.EA1 - Sample (2) 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	Service Request:	K9803034
Project:	SSP-ASR	Date Collected:	5/4/98
Sample Matrix:	Solid	Date Received:	5/13/98
		Date Extracted:	5/15/98

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A
Units: mg/Kg (ppm)
As Received Basis

	Sample Name:	5	6	Method Blank
	Lab Code:	K9803034-005(D)	K9803034-006(D)	K980515-MB
	Date Analyzed:	5/27/98	5/27/98	5/27/98
Analyte	**MRL**			
Aroclor 1016	0.1	<1	<1	ND
Aroclor 1221	0.1	<1	<1	ND
Aroclor 1232	0.1	<1	<1	ND
Aroclor 1242	0.1	6	14	ND
Aroclor 1248	0.1	<1	<1	ND
Aroclor 1254	0.1	<1	<1	ND
Aroclor 1260	0.1	<1	<1	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 5/27/98

SST2/120394
030348VO.AT1 - 1-MB 5/27/98

COLUMBIA ANALYTICAL SERVICES, I. ..

QA/QC Report

Client:	Schnitzer Steel Products Co.	Service Request:	K9803034
Project:	SSP-ASR	Date Collected:	5/4/98
Sample Matrix:	Solid	Date Received:	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98
		Date Analyzed:	5/21/98

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 4
Lab Code: K9803034-004

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	5.8	116
Barium	5	1.2	6.7	110
Cadmium	1	0.25	1.17	92
Chromium	5	ND	5.48	110
Lead	5	0.61	5.67	101
Mercury	0.01	ND	0.01	100
Selenium	1	ND	1.2	120
Silver	1	ND	0.87	87

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 5/26/98

TCLP\Metal - Spike 5/26/98

00006
Page No.:

SCHN00244353

COLUMBIA ANALYTICAL SERVICES.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date Extracted:	5/15/98
		Date Analyzed:	5/27/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A

Sample Name	Lab Code	Percent Recovery Decachlorobiphenyl
5	K9803034-005	77
6	K9803034-006	64
Method Blank	K980515-MB	84

CAS Acceptance Limits: 54-144

Approved By: _____ Date: 5/27/98

SURI/120394
030345VGLAY1 - SUR1 5/27/98

Cascade Analytical Services Inc. 1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 5/13/98 PAGE 1 OF 1

PROJECT NAME: SSP-ASR

PROJECT MANAGER: Tim Todd

COMPANY/ADDRESS: SSP / PO Box 10047

FAX: PHONE:

SAMPLERS SIGNATURE:

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neut/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticide/PCBs 608/8080	Total Petroleum Hydrocarbons EPA418.1 ☐ OR418.1 ☐ WA418.1 ☐	TPH/Gas/BTEX 8020/8015/8020 Gas ☐ BTEX ☐	TPH8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/HCID ☐ OR/HCID ☐ WA/HCID ☐	TCLP Metals ☐	Semi Pest VOA ☐ Herbs	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH3-N, COD, Total-P, TKN, TOC	Total Organic Halides (TOX) 9020 OR(AOX) 1650AO				REMARKS
1	5/4		1	Solid	1									X										00008
2	↓		2	↓	1									X										
3			3		1									X										
4			4		1									X										
5			5		1				X															
6			6		1				X															

RELINQUISHED BY:	RECEIVED BY:
Signature: Timothy K. Todd	Signature: [illegible]
Printed Name: Timothy Todd	Printed Name: Amy Cowan
Firm: SSP	Firm: CAS
Date/Time: 5/13/98	Date/Time: 5-14-98 9:00

TURNAROUND REQUIREMENTS: 24 hr ___ 48 hr. ___ 5 day; X Standard (10-15 working days); ___ Provide Verbal Preliminary Results; ___ Provide FAX preliminary Results; Requested Report Date ___

REPORT REQUIREMENTS: X I. Routine Report; ___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples); ___ III. Data Validation Report (includes All Raw Data); ___ IV. CLP Deliverable Report

INVOICE INFORMATION: P.O.# ___ Bill To ___

SAMPLE RECEIPT: Shipping Via: ___ Shipping #: ___ Condition: ___ Lab No: 3034

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

SCHN00244355

Oregon Waste Systems, Inc.
Columbia Ridge Landfill & Recycling Center
18177 Cedar Springs Lane
Arlington, Oregon 97812
541/454-2030 • FAX: 541/454-3312

A Waste Management Company

July 27, 1998

Gerry Preston
Manager, Solid Waste & Tanks
Eastern Region
Oregon Department of Environmental Quality
400 E Scenic Dr., Suite 2-307
The Dalles, OR 97058

RE: Columbia Ridge Landfill and Recycling Center
Results From Schnitzer Steel's Sampling and Analysis of Auto Shredding Residue

Dear Mr. Preston:

In accordance with Conditon 6 of your September 18, 1995 approval letter, please find attached the test results and statistical summary for Schnitzer Steel's automobile shredder residue (ASR) for the previous three years. Also attached is a letter from Schnitzer Steel dated July 20, 1998 which accompanied the test results.

As indicated by Mr. Timothy Todd, of Schnitzer Steel Products Co., the most recent sampling of the ASR was conducted on May 13, 1998 in accordance with Schnitzer Steel's May 1995 Sampling and Analysis Plan and statistically evaluated by methods described in the EPA publicaton "Scrap Metal Shredder Sampling Guidance Document" dated August, 1993. Based on the statistical summary provided in Table 1, the analysis has demonstrated a 95% confidence level for the cadmium, lead, and PCB concentrations which are below regulatory levels. In addition, the analysis indicates that the average concentration of the contaminants is below the cut-off value.

If you have any questions regarding this submittal please contact me at 541-454-3201.

Sincerely,
Columbia Ridge Landfill and Recycling Center

Samir M. Jiries
Environmental Manager

cc: Tim Davison, Solid Waste, Pendleton
Ken Lucas, Solid Waste, The Dalles
Steve Seed, Landfill Manager
Timothy R. Todd, Schnitzer Steel Products Co.

SCHNITZER STEEL PRODUCTS CO.

'05 N. Burgard St. Portland, Oregon 97203
. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

July 20, 1998

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: May 1998 Automobile Shredder Residue Laboratory Results

Dear Gary:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on May 13, 1998, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Longview, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 3 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of laboratory report is attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Reports

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3*		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.0002	0.26	0.01	33.85
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.0002	0.25	0.1	5.0
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.2	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.1	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.83
Average		--	1.2	0.25	0.75	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[g]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.5	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.5	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.5	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.01	--	0.1	--	--	--	--
Average		--	--	0.56	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.2	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4ASR		ND	0.22	0.33	0.05	1.03	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	3.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#9	8/94	ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6
OVERALL:										
Average		--	--	0.34	--	1.87	--	--	--	13.29
Median		--	--	0.34	--	1.53	--	--	--	11.55
Variance		--	--	0.03	--	3.44	--	--	--	122.37
Standard Dev.		--	--	0.18	--	1.86	--	--	--	11.06
T-Value (CL)		--	--	2.01	--	2.01	--	--	--	2.05
T-Value (Hyp.)		--	--	1.68	--	1.68	--	--	--	1.70
LCL		--	--	0.29	--	1.43	--	--	--	9.90
UCL		--	--	0.38	--	2.31	--	--	--	16.74
Cut-off Value		--	--	1.04	--	5.36	--	--	--	52.21

NOTE:
[a] PCBs are reported as the sum of all detected Aroclors.
[b] ND - Not detected at or above the method reporting limit.
[c] NA - Not analyzed.
[d] MRL - Method reporting limit.
[e] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

May 28, 1998

Service Request No: K9803034

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97210

Re: SSP-ASR

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on May 13, 1998. For your reference, these analyses have been assigned our service request number K9803034.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/jcb

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-106

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9803034-001	K9803034-002	K9803034-003
			Date Analyzed:	5/21/98	5/21/98	5/21/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/200.8	0.1	5	ND	ND	ND
Barium	3010A/200.8	0.5	100	1.7	1.4	1.0
Cadmium	3010A/200.8	0.01	1	0.32	1.06	0.34
Chromium	3010A/200.8	0.01	5	ND	0.06	0.11
Lead	3010A/200.8	0.01	5	0.42	0.54	1.71
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/200.8	0.1	1	ND	ND	ND
Silver	3010A/200.8	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 5/26/98

TCLP/102194
03034ICP.SAJ - Sample 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	**Method Blank**
			Lab Code:	K9803034-004	K9803034-MB
			Date Analyzed:	5/21/98	5/21/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/200.8	0.1	5	ND	ND
Barium	3010A/200.8	0.5	100	1.2	ND
Cadmium	3010A/200.8	0.01	1	0.25	ND
Chromium	3010A/200.8	0.01	5	ND	ND
Lead	3010A/200.8	0.01	5	0.61	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/200.8	0.1	1	ND	ND
Silver	3010A/200.8	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 5/26/98

TCLP/102194
03K04ICP.EAI - Sample (2) 5/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date Extracted:	5/15/98

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A
Units: mg/Kg (ppm)
As Received Basis

	Sample Name:	5	6	**Method Blank**
	Lab Code:	K9803034-005(D)	K9803034-006(D)	K980515-MB
	Date Analyzed:	5/27/98	5/27/98	5/27/98
Analyte	**MRL**			
Aroclor 1016	0.1	<1	<1	ND
Aroclor 1221	0.1	<1	<1	ND
Aroclor 1232	0.1	<1	<1	ND
Aroclor 1242	0.1	6	14	ND
Aroclor 1248	0.1	<1	<1	ND
Aroclor 1254	0.1	<1	<1	ND
Aroclor 1260	0.1	<1	<1	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 5/27/98

2522/120394
030348VOLAYI - 1-MB 5/27/98

COLUMBIA ANALYTICAL SERVICES, I. ..

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date TCLP Performed:	5/19/98
		Date Extracted:	5/20/98
		Date Analyzed:	5/21/98

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 4
Lab Code: K9803034-004

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	5.8	116
Barium	5	1.2	6.7	110
Cadmium	1	0.25	1.17	92
Chromium	5	ND	5.48	110
Lead	5	0.61	5.67	101
Mercury	0.01	ND	0.01	100
Selenium	1	ND	1.2	120
Silver	1	ND	0.87	87

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 5/26/98

TCLP Metals - Spike 5/26/98

00006
Page No.:

SCHN00244367

COLUMBIA ANALYTICAL SERVICES, I. ..

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9803034
Project:	SSP-ASR	**Date Collected:**	5/4/98
Sample Matrix:	Solid	**Date Received:**	5/13/98
		Date Extracted:	5/15/98
		Date Analyzed:	5/27/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8080A

Sample Name	Lab Code	Percent Recovery Decachlorobiphenyl
5	K9803034-005	77
6	K9803034-006	64
Method Blank	K980515-MB	84

CAS Acceptance Limits: 54-144

Approved By: _____ Date: 5/27/98

SURI/120594
030045VCLAY1 - SURI 5/27/98

00007
Page No.

SCHN00244368

Columbia Analytical Services Inc.

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 5/13/98 PAGE 1 OF 1

PROJECT NAME SSP-ASR #

PROJECT MANAGER Tim Todd

COMPANY/ADDRESS SSP / PO Box 10017

FAX _____ PHONE _____

SAMPLERS SIGNATURE _____

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neut/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐	Pesticides/PCBs 608/8080 ☐	Total Petroleum Hydrocarbons EPA418.1 ☐ ORH418.1 ☐ WAH418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/ACID ☐ WAH/ACID ☐ ORH/ACID ☐	TCLP Metals ☐	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX)	1650 ☐			REMARKS
1	5/4		1	Solid	1									X									
2	↓		2	↓	1									X									
3			3		1									X									
4			4		1									X									
5			5		1				X														
6			6	↓	1				X														

00008

RELINQUISHED BY:	RECEIVED BY:
Signature: Timothy K. Todd	Signature: [illegible]
Printed Name: Timothy Todd	Printed Name: Amy Conner
Firm: SSP	Firm: CAS
Date/Time: 5/13/98	Date/Time: 5-14-98 9:00

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. ___ 5 day

X Standard (10-15 working days)

___ Provide Verbal Preliminary Results

___ Provide FAX preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

X I. Routine Report

___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)

___ III. Data Validation Report (includes All Raw Data)

___ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O.# _____

Bill To _____

SAMPLE RECEIPT:

Shipping VIA: _____

Shipping #: _____

Condition: _____

Lab No: 3034

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

SCHN00244369

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 289875 FAX (503) 286-6948

January 6, 1999

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: October 1998 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on October 29, 1998, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Longview, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 2 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of the laboratory report is attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Report

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	10/98	ND[b]	0.7	0.09	0.04	1.77	ND	ND	ND	NA[c]
2		ND	1.1	0.08	0.03	1.80	ND	ND	ND	NA
3		ND	1.2	0.14	0.04	2.85	ND	ND	ND	NA
4		ND	1.2	0.14	0.04	2.18	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	21.0
6		NA	NA	NA	NA	NA	NA	NA	NA	14.2
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.1[e]
Average		0.1	1.1	0.11	0.04	2.15	0.001	0.1	0.01	17.6
1	5/98	ND	1.7	0.32	ND	0.42	ND	ND	ND	NA
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL		0.1	0.5	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.33	0.49	0.07	0.82	0.001	0.1	0.01	10
1	12/97	ND	0.9	0.14	0.04	1.53	ND	ND	ND	NA
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
5		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
6		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.05	0.50	0.01	0.01	0.2	0.0001	0.1	0.01	0.1
Average		0.05	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.0002	0.26	0.01	33.85
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
OVERALL:										
Average		–	–	0.37	–	1.51	–	–	–	24.89
Median		–	–	0.36	–	1.62	–	–	–	21.80
Variance		–	–	0.05	–	0.52	–	–	–	230.48
Standard Dev.		–	–	0.23	–	0.72	–	–	–	15.18
T-Value (CL)		–	–	2.07	–	2.07	–	–	–	2.26
T-Value (Hyp.)		–	–	1.71	–	1.71	–	–	–	1.83
LCL		–	–	0.27	–	1.20	–	–	–	14.04
UCL		–	–	0.47	–	1.81	–	–	–	35.74
Cut-off Value		–	–	1.08	–	5.25	–	–	–	58.79

NOTE:

[a] PCBs are reported as the sum of all detected Aroclors.

[b] ND - Not detected at or above the method reporting limit.

[c] NA - Not analyzed.

[d] MRL - Method reporting limit.

[e] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

December 4, 1998

Service Request No: K9807523

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97296-0047

Re: Schnitzer Steel-IT

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on October 30, 1998. For your reference, these analyses have been assigned our service request number K9807523.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/br

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel-IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date Extracted:	NA
		Date Analyzed:	11/2/98

Solids, Total
EPA Method 160.3 Modified
Units: Percent (%)

Sample Name	Lab Code	Result
5	K9807523-005	88.9
6	K9807523-006	90.0

Approved By: _____ Date: 11/4/98

1A/102094
07523ICP.AB1 - TSolids 11/3/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Schnitzer Steel Products Co.
Project: Schnitzer Steel - IT
Sample Matrix: Soil

Service Request: K9807523
Date Collected: 10/29/98
Date Received: 10/30/98
Date TCLP Performed: 11/10/98
Date Extracted: 11/11/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9807523-001	K9807523-002	K9807523-003
			Date Analyzed:	11/13/98	11/13/98	11/13/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010B	0.1	5	ND	ND	ND
Barium	3010A/6010B	0.5	100	0.7	1.1	1.2
Cadmium	3010A/6010B	0.01	1	0.09	0.08	0.14
Chromium	3010A/6010B	0.01	1	0.04	0.03	0.04
Lead	3010A/6010B	0.05	5	1.77	1.80	2.85
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: JC Date: 11/14/98

TCLP/102194
07523ICP.JC1 - Sample 11/14/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel - IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date TCLP Performed:	11/10/98
		Date Extracted:	11/11/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	**Method Blank**
			Lab Code:	K9807523-004	K9807523-MB
			Date Analyzed:	11/13/98	11/13/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010B	0.1	5	ND	ND
Barium	3010A/6010B	0.5	100	1.2	ND
Cadmium	3010A/6010B	0.01	1	0.14	ND
Chromium	3010A/6010B	0.01	1	0.04	ND
Lead	3010A/6010B	0.05	5	2.18	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 11/14/98

TCLP/102194
07523ICP.JC1 - Sample (2) 11/14/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel-IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date Extracted:	11/12/98

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082
Units: mg/Kg (ppm)
Dry Weight Basis

		Sample Name:	5	6	**Method Blank**
		Lab Code:	K9807523-005(D)	K9807523-006(D)	KWG9803958-4
		Date Analyzed:	11/26/98	11/26/98	11/20/98
Analyte	**MRL**				
Aroclor 1016	0.1		<2.5	<1.5	ND
Aroclor 1221	0.1		<2.5	<1.5	ND
Aroclor 1232	0.1		<2.5	<1.5	ND
Aroclor 1242	0.1		18	12	ND
Aroclor 1248	0.1		<2.5	<1.5	ND
Aroclor 1254	0.1		3.0	2.2	ND
Aroclor 1260	0.1		<2.5	<1.5	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Vonda Neuneker Date: 12-4-98

3S22MDL/120594
07523SVG.BJ1 - 1-3 12/4/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel - IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date TCLP Performed:	11/10/98
		Date Extracted:	11/11/98
		Date Analyzed:	11/13/98

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 1
Lab Code: K9807523-001

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	5.0	100
Barium	5	0.7	5.5	96
Cadmium	1	0.09	1.05	96
Chromium	5	0.04	4.71	93
Lead	5	1.77	6.42	93
Mercury	0.01	ND	0.010	100
Selenium	1	ND	1.0	100
Silver	1	ND	0.92	92

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 11/14/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel-IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date Extracted:	11/12/98
		Date Analyzed:	11/20 - 21/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082

Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
5	K9807523-005	120
6	K9807523-006	95
Method Blank	KWG9803958-4	57

CAS Acceptance Limits: 42-130

Approved By: Wanda Neuneker Date: 12-4-98

SUR1/120594
07523SVG.BJ1 - SUR1 12/4/98

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: K9807523

PAGE 1 OF 1 COC #

PROJECT NAME: Schnitzer Steel - IT
PROJECT NUMBER:
PROJECT MANAGER: Tim Todd
COMPANY/ADDRESS: Schnitzer Steel
PO Box 10047 Portland 97296-0047
PHONE #: 503/286-6944 FAX #: 503/286-6948
SAMPLER'S SIGNATURE: Tim Todd

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Pesticide / Herbicides 608☐ 8081☐	BTEX☐ 8021☐	Total Toxic Organics (TTO) 608☐ 8141☐	8151☐	PCB AROCLORs ~~8082~~ 8080	624☐ 625☐	NWTPH - HCID☐ NWTPH-D☐	NWTPH-G☐	Hydrocarbon Scan☐	O & G☐	Chlorophenolics - 8151M Tri☐ Tetra☐	PCP☐	PAHs 8310☐	SIM☐	GC/MS-SIM PAH☐	Phenol☐ Phthalates☐	Metals (Total or Dissolved) (See list below) TCLP	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOC 9020☐	AOX 1650☐	506☐					REMARKS
1	10/29	1600		Soil	1																		1														
2	↓	↓		↓	1																		1														
3					1																		1														
4					1																		1														
5					1							1																									
6					1							1																									

REPORT REQUIREMENTS

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

INVOICE INFORMATION

P.O. # 34010
Bill To: As above

TURNAROUND REQUIREMENTS

- ___ 24 hr. ___ 48 hr.
- ___ 5 Day
- X Standard (10-15 working days)
- ___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed: TCLP

Total Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co (Cr) Cu Fe (Pb) Mg Mn Mo Ni K (Ag) Na (Se) Sr Tl Sn V Zn (Hg)

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
Signature: Tim Todd — Date/Time: 10/29/98	Signature — Date/Time	Signature — Date/Time	Signature — Date/Time
Printed Name: Tim Todd — Firm: SSP	Printed Name — Firm	Printed Name — Firm	Printed Name — Firm

SCHN00244382

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER
A WASTE MANAGEMENT COMPANY

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

January 15, 1999

Gerry Preston
Manager, Solid Waste & Tanks
Eastern Region
Oregon Department of Environmental Quality
400 E Scenic Dr., Suite 2-307
The Dalles, OR 97058

RE: Columbia Ridge Landfill and Recycling Center
Results From Schnitzer Steel's Sampling and Analysis of Auto Shredding Residue

Dear Mr. Preston:

In accordance with Condition 6 of your September 18, 1995 approval letter, please find attached the test results and statistical summary for Schnitzer Steel's automobile shredder residue (ASR) for the previous two years. Also attached is a letter from Schnitzer Steel which accompanied the test results.

As indicated by Mr. Timothy Todd, of Schnitzer Steel Products Co., the most recent sampling of the ASR was conducted on October 29, 1999 in accordance with Schnitzer Steel's May 1995 Sampling and Analysis Plan and statistically evaluated by methods described in the EPA publication "Scrap Metal Shredder Sampling Guidance Document" dated August, 1993. Based on the statistical summary provided in Table 1, the analysis has demonstrated a 95% confidence level for the cadmium, lead, and PCB concentrations which are below regulatory levels. In addition, the analysis indicates that the average concentration of the contaminants is below the cut-off value.

If you have any questions regarding this submittal please contact me at 541-454-3201.

Sincerely,
Columbia Ridge Landfill and Recycling Center

Samir M. Jiries

Samir M. Jiries
Environmental Manager

c: Ken Lucas, ODEQ, Solid Waste, The Dalles office
Steve Seed, Landfill Manager, CRLRC
Timothy R. Todd, Environmental Administrator, Schnitzer Steel Products Co.

C:\Msoffice\Winword\PKLetter\DEQ56.doc

SCHN00244383

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 289875 FAX (503) 286-6948

January 6, 1999

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: October 1998 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on October 29, 1998, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Longview, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8080.

ASR sample analytical data for the past 2 years are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of the laboratory report is attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments: Table 1
Laboratory Report

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	10/98	ND[b]	0.7	0.09	0.04	1.77	ND	ND	ND	NA[c]
2		ND	1.1	0.08	0.03	1.80	ND	ND	ND	NA
3		ND	1.2	0.14	0.04	2.85	ND	ND	ND	NA
4		ND	1.2	0.14	0.04	2.18	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	21.0
6		NA	NA	NA	NA	NA	NA	NA	NA	14.2
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.1[e]
Average		0.1	1.1	0.11	0.04	2.15	0.001	0.1	0.01	17.6
1	5/98	ND	1.7	0.32	ND	0.42	ND	ND	ND	NA
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL		0.1	0.5	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.33	0.49	0.07	0.82	0.001	0.1	0.01	10
1	12/97	ND	0.9	0.14	0.04	1.53	ND	ND	ND	NA
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
5		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
6		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.05	0.50	0.01	0.01	0.2	0.0001	0.1	0.01	0.1
Average		0.05	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.05	0.50	0.01	0.01	0.2	0.0002	0.25	0.01	16.0
Average		0.05	1.01	0.56	0.03	1.67	0.0002	0.26	0.01	33.85
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	8.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
OVERALL:										
Average		--	--	0.37	--	1.51	--	--	--	24.89
Median		--	--	0.36	--	1.62	--	--	--	21.80
Variance		--	--	0.05	--	0.52	--	--	--	230.48
Standard Dev.		--	--	0.23	--	0.72	--	--	--	15.18
T-Value (CL)		--	--	2.07	--	2.07	--	--	--	2.26
T-Value (Hyp.)		--	--	1.71	--	1.71	--	--	--	1.83
LCL		--	--	0.27	--	1.20	--	--	--	14.04
UCL		--	--	0.47	--	1.81	--	--	--	35.74
Cut-off Value		--	--	1.08	--	5.25	--	--	--	58.79

NOTE:

[a] PCBs are reported as the sum of all detected Aroclors.

[b] ND - Not detected at or above the method reporting limit.

[c] NA - Not analyzed.

[d] MRL - Method reporting limit.

[e] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

December 4, 1998

Service Request No: K9807523

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97296-0047

Re: Schnitzer Steel-IT

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on October 30, 1998. For your reference, these analyses have been assigned our service request number K9807523.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/br

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-106

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel-IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date Extracted:	NA
		Date Analyzed:	11/2/98

Solids, Total
EPA Method 160.3 Modified
Units: Percent (%)

Sample Name	Lab Code	Result
5	K9807523-005	88.9
6	K9807523-006	90.0

Approved By: _____ Date: 11/4/98

1A/102094
075231CP.AB1 - TSolids 11/3/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Schnitzer Steel Products Co.
Project: Schnitzer Steel - IT
Sample Matrix: Soil

Service Request: K9807523
Date Collected: 10/29/98
Date Received: 10/30/98
Date TCLP Performed: 11/10/98
Date Extracted: 11/11/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9807523-001	K9807523-002	K9807523-003
			Date Analyzed:	11/13/98	11/13/98	11/13/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010B	0.1	5	ND	ND	ND
Barium	3010A/6010B	0.5	100	0.7	1.1	1.2
Cadmium	3010A/6010B	0.01	1	0.09	0.08	0.14
Chromium	3010A/6010B	0.01	1	0.04	0.03	0.04
Lead	3010A/6010B	0.05	5	1.77	1.80	2.85
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: JC Date: 11/14/98

TCLP/102194
075231CP.JC1 - Sample 11/14/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel - IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date TCLP Performed:	11/10/98
		Date Extracted:	11/11/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	**Method Blank**
			Lab Code:	K9807523-004	K9807523-MB
			Date Analyzed:	11/13/98	11/13/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010B	0.1	5	ND	ND
Barium	3010A/6010B	0.5	100	1.2	ND
Cadmium	3010A/6010B	0.01	1	0.14	ND
Chromium	3010A/6010B	0.01	1	0.04	ND
Lead	3010A/6010B	0.05	5	2.18	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29. 1990 and June 29. 1990.

Approved By: _____ Date: 11/14/98

TCLP/102194
07523ICP.JC1 - Sample (2) 11/14/98

SCHN00244392

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel-IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date Extracted:	11/12/98

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082
Units: mg/Kg (ppm)
Dry Weight Basis

	Sample Name:	5	6	**Method Blank**
	Lab Code:	K9807523-005(D)	K9807523-006(D)	KWG9803958-4
	Date Analyzed:	11/26/98	11/26/98	11/20/98
Analyte	**MRL**			
Aroclor 1016	0.1	<2.5	<1.5	ND
Aroclor 1221	0.1	<2.5	<1.5	ND
Aroclor 1232	0.1	<2.5	<1.5	ND
Aroclor 1242	0.1	18	12	ND
Aroclor 1248	0.1	<2.5	<1.5	ND
Aroclor 1254	0.1	3.0	2.2	ND
Aroclor 1260	0.1	<2.5	<1.5	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Wanda Neuneker Date: 12-4-98

3S22MDL/120594
07523SVG.BJ1 - 1-3 12/4/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel - IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date TCLP Performed:	11/10/98
		Date Extracted:	11/11/98
		Date Analyzed:	11/13/98

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 1
Lab Code: K9807523-001

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	5.0	100
Barium	5	0.7	5.5	96
Cadmium	1	0.09	1.05	96
Chromium	5	0.04	4.71	93
Lead	5	1.77	6.42	93
Mercury	0.01	ND	0.010	100
Selenium	1	ND	1.0	100
Silver	1	ND	0.92	92

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 11/14/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9807523
Project:	Schnitzer Steel-IT	**Date Collected:**	10/29/98
Sample Matrix:	Soil	**Date Received:**	10/30/98
		Date Extracted:	11/12/98
		Date Analyzed:	11/20 - 21/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082

Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
5	K9807523-005	120
6	K9807523-006	95
Method Blank	KWG9803958-4	57

CAS Acceptance Limits: 42-130

Approved By: Wanda Neuneker Date: 12-4-98

SUR1/120594
07523SVG.BJ1 - SUR1 12/4/98

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: K4807525

PAGE 1 OF 1 COC #

PROJECT NAME: Schnitzer Steel - IT
PROJECT NUMBER:
PROJECT MANAGER: Tim Todd
COMPANY/ADDRESS: Schnitzer Steel
PO Box 10047 Portland 97296-0047
PHONE #: 503/286-6944 FAX #: 503/286-6948
SAMPLER'S SIGNATURE: Tim Todd

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐	Volatile Organics 624☐ 8260☐	Pesticide / Herbicides 608☐ 8021☐	Total Toxic Organics (TTO) 608☐ 8081☐	PCB/AROCLORs 8082 624☐ 8141☐ 625☐ 8151☐	NWTPH-HCID☐ NWTPH-D☐	NWTPH-G☐	Hydrocarbon Scan☐ O & G☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHs 8310☐ SIM☐	GC/MS-SIM PAH☐ Phenol☐ Phthalates☐	Metals Total or Dissolved (See list below) TCLP	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOC 9020☐ AOX 1650☐ 508☐					REMARKS
1	10/29	1600		Soil	1												1									
2	↓	↓		↓	1												1									
3					1												1									
4					1												1									
5					1					1																
6					1					1																

REPORT REQUIREMENTS

X I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION
P.O. # 34010
Bill To: As above

TURNAROUND REQUIREMENTS
___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed: TCLP
Total Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co (Cr) Cu Fe (Pb) Mg Mn Mo Ni K (Ag) Na (Se) Sr Tl Sn V Zn (Hg)
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
Signature: Tim Todd — Date/Time: 10/29/98	Signature — Date/Time	Signature — Date/Time	Signature — Date/Time
Printed Name: Tim T. — Firm: SSP	Printed Name — Firm	Printed Name — Firm	Printed Name — Firm

SCHN00244396

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210 Phone 503/224-9900 Telex/W.U. 36-0144

July 21, 1999

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: April 1999 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on April 9, 1999, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Kelso, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8082.

ASR sample analytical data dating back to March 1994 are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of the laboratory report is attached.

Please contact me at (503) 286-6976 if you have questions.

Sincerely,
Schnitzer Steel Products Co.

James L. Jakubiak
Environmental Administrator

Attachments: Table 1
Laboratory Report

cc: Tom Zelenka, Schnitzer Steel
Robert Anderson, Waste Management

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	4/99	ND	1.1	0.73	0.05	2.21	ND	ND	ND	NA
2		ND	1.4	0.59	0.08	2.12	ND	ND	ND	NA
3		0.1	1.6	0.41	0.07	3.33	ND	ND	ND	NA
4		ND	1.4	1.45	0.08	8.88	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	20
6		NA	NA	NA	NA	NA	NA	NA	NA	17
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.1	0.3
Average		0.1	1.38	0.8	0.07	4.12	0.001	0.1	0.1	18.5
1	10/98	ND[b]	0.7	0.09	0.04	1.77	ND	ND	ND	NA[c]
2		ND	1.1	0.08	0.03	1.80	ND	ND	ND	NA
3		ND	1.2	0.14	0.04	2.85	ND	ND	ND	NA
4		ND	1.2	0.14	0.04	2.18	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	21.0
6		NA	NA	NA	NA	NA	NA	NA	NA	14.2
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.1[e]
Average		0.1	1.05	0.11	0.04	2.15	0.001	0.1	0.01	17.6
1	5/98	ND	1.7	0.32	ND	0.42	ND	ND	ND	NA
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL		0.1	0.5	0.01	0.01	0.01	0.001	0.1	0.01	0.1
Average		0.1	1.33	0.49	0.05	0.82	0.001	0.1	0.01	10

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	12/97	ND	0.9	0.14	0.04	1.53	ND	ND	ND	NA
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
6		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
5		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.1	0.5	0.01	0.01	0.05	0.0001	0.1	0.01	0.1
Average		0.1	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.5	0.5	0.01	0.01	0.2	0.0002	0.25	0.01	2.0
Average		0.05	1.01	0.56	0.03	1.72	0.0002	0.26	0.01	33.85

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR1	8/96	ND	1.5	0.40	0.066	1.7	ND	ND	ND	NA
ASR2		ND	1.7	0.53	0.025	0.54	ND	ND	ND	NA
ASR3		ND	1.4	0.57	0.030	1.1	ND	ND	ND	NA
ASR4		ND	1.7	0.59	0.024	0.98	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	20
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	24
MRL		0.50	0.50	0.01	0.01	0.20	0.0005	0.25	0.01	2.0
Average		0.50	1.6	0.52	0.036	1.08	0.0005	0.25	0.01	22
ASR1	2/96	ND	1.4	0.24	0.26	5.0	ND	ND	ND	NA
ASR2		ND	1.4	0.24	0.21	3.2	ND	ND	ND	NA
ASR3		ND	1.3	0.20	0.20	1.7	ND	ND	ND	NA
ASR4		ND	1.5	0.28	0.28	3.3	ND	ND	ND	NA
ASR5		NA	NA	NA	NA	NA	NA	NA	NA	ND
ASR6		NA	NA	NA	NA	NA	NA	NA	NA	ND
MRL		0.5	0.5	0.01	0.01	0.2	0.0002	0.25	0.1	5.0
Average		--	1.4	0.24	0.24	3.3	--	--	--	--
ASR#1	9/95	ND	1.2	0.20	0.18	1.6	ND	ND	ND	NA
ASR#2		ND	1.6	0.18	0.10	0.7	ND	ND	ND	NA
ASR#3		ND	1.2	0.37	0.07	1.6	ND	ND	ND	NA
ASR#4		ND	0.97	0.24	2.6	7.5	ND	ND	ND	NA
ASR#5		NA	NA	NA	NA	NA	NA	NA	NA	5.4
ASR#6		NA	NA	NA	NA	NA	NA	NA	NA	6.3
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	0.83
Average		--	1.2	0.25	0.74	2.9	--	--	--	5.9
ASR#1	3/95	ND	1.4	0.1	0.06	0.1	ND	ND	ND	33
MRL		0.1	0.04	0.01	0.02	0.1	0.05	0.2	0.1	NR[g]

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	2/95	NA	NA	0.37	NA	1.6	NA	NA	NA	NA
ASR#2		NA	NA	0.44	NA	2.5	NA	NA	NA	NA
ASR#3		NA	NA	0.52	NA	1.2	NA	NA	NA	NA
ASR#4		NA	NA	0.43	NA	2.2	NA	NA	NA	NA
ASR#5		NA	NA	0.33	NA	2.8	NA	NA	NA	NA
ASR#6		NA	NA	0.38	NA	2.0	NA	NA	NA	NA
ASR#7		NA	NA	0.33	NA	3.7	NA	NA	NA	NA
ASR#8		NA	NA	0.48	NA	2.9	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.41	--	2.4	--	--	--	--
ASR#1	1/95	NA	NA	0.57	NA	0.7	NA	NA	NA	NA
ASR#2		NA	NA	0.51	NA	1.6	NA	NA	NA	NA
ASR#3		NA	NA	0.51	NA	0.9	NA	NA	NA	NA
ASR#4		NA	NA	0.6	NA	1.6	NA	NA	NA	NA
ASR#5		NA	NA	0.46	NA	0.7	NA	NA	NA	NA
ASR#6		NA	NA	0.64	NA	0.6	NA	NA	NA	NA
ASR#7		NA	NA	0.74	NA	0.9	NA	NA	NA	NA
ASR#8		NA	NA	0.50	NA	1.3	NA	NA	NA	NA
MRL		--	--	0.02	--	0.1	--	--	--	--
Average		--	--	0.57	--	1.0	--	--	--	--

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
ASR#1	12/94	ND	1.2	0.5	0.03	6.2	ND	ND	ND	25
ASR#2		ND	1.2	0.49	0.02	12	ND	ND	ND	12
ASR#3		ND	1.2	0.43	ND	3.8	ND	ND	ND	18
ASR#4		ND	1.2	0.36	ND	1.4	ND	ND	ND	19
ASR#5		ND	1.2	0.49	0.04	5.6	ND	ND	ND	16
ASR#6		ND	1.3	0.53	0.05	17	ND	ND	ND	19
ASR#7		ND	1.3	5.82	0.02	3.4	ND	ND	ND	15
ASR#8		ND	1.0	0.37	0.02	4.2	ND	ND	ND	19
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	2.0
Average		--	1.2	1.12	0.02	6.68	--	--	--	18
#1ASR	11/94	ND	0.19	0.48	ND	1.0	ND	ND	ND	20
#2ASR		ND	0.14	0.34	0.04	0.7	ND	ND	ND	14
#3ASR		ND	0.19	0.36	0.04	1.0	ND	ND	ND	17
#4ASR		ND	0.22	0.33	0.05	1.3	ND	ND	ND	13
MRL		0.1	0.01	0.02	0.02	0.1	0.05	0.2	0.1	7.0
Average		--	0.19	0.38	0.04	0.93	--	--	--	16
#1	8/94	ND	1.3	ND	ND	2.06	ND	ND	ND	17.4
#2		ND	1.14	0.12	ND	ND	ND	ND	ND	19.1
#3		ND	1.27	0.12	ND	0.64	ND	ND	ND	8.3
#4		ND	1.3	0.17	ND	ND	ND	ND	ND	7.7
#5		ND	1.37	0.12	ND	0.81	ND	ND	ND	9.4
#6		ND	1.39	0.13	ND	1.03	ND	ND	ND	9.5
#7		ND	1.44	0.13	ND	2.08	ND	ND	ND	ND
#8		ND	1.29	ND	ND	ND	ND	ND	ND	9.6

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
#9	8/94	ND	1.38	0.11	ND	2.16	ND	ND	ND	10.9
#10		ND	1.35	0.13	ND	1.25	ND	ND	ND	10.4
#11		ND	1.32	0.11	ND	1.12	ND	ND	ND	11.1
#12		ND	1.36	0.14	ND	1.61	ND	ND	ND	11.1
#13		ND	1.47	0.14	ND	1.95	ND	ND	ND	10.6
#14		ND	1.20	0.16	ND	1.71	ND	ND	ND	8.1
#15		ND	1.30	0.16	ND	0.97	ND	ND	ND	13.9
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	3.0
Average		--	1.33	0.13	--	1.26	--	--	--	11
SS-1	3/94	ND	1.03	0.37	ND	2.48	ND	ND	ND	ND
SS-3		--	--	0.33	--	1.76	--	--		ND
SS-9		--	--	0.15	--	1.07	--	--	--	10.6
MRL		0.1	0.01	0.02	0.5	0.1	0.01	0.1	0.1	5.0
Average		--	1.03	0.28	--	1.77	--	--	--	10.6
OVERALL:										
Average		--	--	0.42	--	2.23	--	--	--	15.48
Median		--	--	0.36	--	1.61	--	--	--	14.0
Variance		--	--	0.41	--	6.29	--	--	--	116.74
Standard Dev.		--	--	0.64	--	2.51	--	--	--	10.81
T-Value (CL)		--	--	1.99	--	1.99	--	--	--	2.05
T-Value (Hyp.)		--	--	1.67	--	1.67	--	--	--	1.70
LCL		--	--	0.28	--	1.68	--	--	--	12.32
UCL		--	--	0.56	--	2.77	--	--	--	18.65
Cut-off Value		--	--	1.12	--	5.46	--	--	--	52.62

NOTE:

[a] PCBs are reported as the sum of all detected Aroclors.

[b] ND - Not detected at or above the method reporting limit.

[c] NA - Not analyzed.

[d] MRL - Method reporting limit.

[e] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

April 26, 1999

Service Request No: K9902273

Jim Jakubiak
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97296-0047

Re: Schnitzer Steel

Dear Jim:

Enclosed are the results of the sample(s) submitted to our laboratory on April 13, 1999. For your reference, these analyses have been assigned our service request number K9902273.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jacky
Project Chemist

HJ/klg

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Schenitzer Steel Products Co.	**Service Request No.:**	K9902273
Project:	Schnitzer Steel	**Date Received:**	4/9/99
Sample Matrix:	Solid		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Polychlorinated Biphenyls (PCBs) - EPA Method 8082:

The PCB MRL is elevated for samples 5 and 6 because of required dilutions that were neceassary because of matrix interference.

The Decachlorobiphenyl surrogate recovery for EPA Method 8082 in samples 5 and 6 were not calculated. The analysis of these samples required dilutions which resulted in a surrogate concentration below the Method Reporting Limit (MRL). No further corrective action was taken.

No other difficulties were experienced during analysis of this batch.

Approved by _____ **Date** 4/26/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9902273-001	K9902273-002	K9902273-003
			Date Analyzed:	4/18, 22/99	4/18, 22/99	4/18, 22/99
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010B	0.1	5	ND	ND	0.1
Barium	3010A/6010B	0.5	100	1.1	1.4	1.6
Cadmium	3010A/6010B	0.01	1	0.73	0.59	0.41
Chromium	3010A/6010B	0.01	1	0.05	0.08	0.07
Lead	3010A/6010B	0.05	5	2.21	2.12	3.33
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 4/23/99

TCLP/102194
02273ICP.BR1 - Sample 4/23/99

SCHN00244408

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	**Method Blank**
			Lab Code:	K9902273-004	K9902273-MB
			Date Analyzed:	4/18, 22/99	4/18, 22/99
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010B	0.1	5	ND	ND
Barium	3010A/6010B	0.5	100	1.4	ND
Cadmium	3010A/6010B	0.01	1	1.45	ND
Chromium	3010A/6010B	0.01	1	0.08	ND
Lead	3010A/6010B	0.05	5	8.80	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 4/23/99

TCLP/102194
02273ICP.BR1 - Sample (2) 4/23/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date Extracted:	4/15/99

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082
Units: mg/Kg (ppm)
As Received Basis

		Sample Name:	5	6	Method Blank
		Lab Code:	K9902273-005(D)	K9902273-006(D)	K990415-MB
		Date Analyzed:	4/16/99	4/16/99	4/16/99
Analyte	**MRL**				
Aroclor 1016	0.3		<3.0	<3.0	ND
Aroclor 1221	0.3		<3.0	<3.0	ND
Aroclor 1232	0.3		<3.0	<3.0	ND
Aroclor 1242	0.3		20	17	ND
Aroclor 1248	0.3		<3.0	<3.0	ND
Aroclor 1254	0.3		<3.0	<3.0	ND
Aroclor 1260	0.3		<3.0	<3.0	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 4/22/99

3S22MDL/120594
02273SVG.AY1 - 5-MB 4/22/99

APPENDIX A
LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Schnitzer Steel Products Co.
Project: Schnitzer Steel
Sample Matrix: Solid

Service Request: K9902273
Date Collected: 4/9/99
Date Received: 4/13/99
Date TCLP Performed: 4/15/99
Date Extracted: 4/16/99
Date Analyzed: 4/18, 22/99

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 1
Lab Code: K9902273-001MS

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	4.6	92
Barium	5	1.1	5.5	88
Cadmium	1	0.73	1.55	82
Chromium	5	0.05	4.36	86
Lead	5	2.21	6.28	81
Mercury	5	ND	0.005	100
Selenium	1	ND	0.99	99
Silver	1	ND	0.77	77

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 4/23/99

TCLPMS/102194
02273ICP.BR1 - Spike 4/23/99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date Extracted:	4/15/99
		Date Analyzed:	4/16/99

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082

Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
5	K9902273-005	NA
6	K9902273-006	NA
Method Blank	K990415-MB	98

CAS Acceptance Limits: 42-130

NA Not Applicable; see case narrative.

Approved By: _____ Date: _____

SUR1/120594
02273SVG.AY1 - SUR1 4/26/99

Columbia Analytical Services inc.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

DATE 4/13/99 PAGE 1 OF 1

PROJECT NAME Schnitzer Steel Products, Inc. #

PROJECT MANAGER Jim Jakobiak

COMPANY/ADDRESS P.O. Box 10047
Portland, Oregon 97210

FAX (503) 286-6948 PHONE (503) 286-6976

SAMPLERS SIGNATURE Jim Jakobiak for Bob Geach

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐	Pesticides/PCBs 608/8080 ☐ 602/8020 ☐	Total Petroleum Hydrocarbons EPA/418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐	TPH/HCID ☐ OR/HCID ☐ WA/418.1 ☐	Hydrocarbon Scan ☐	TCLP Metals ☐	Semi Pest/ VOA ☐ Herb ☐	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650A ☐			REMARKS
1	4/9/99			Solid	1										X									
2	4/9/99			↓	1										X									
3	4/9/99				1										X									
4	4/9/99				1										X									
5	4/9/99				1				X															
6	4/9/99			↓	1				X															

RELINQUISHED BY:
Signature: Jim Jakobiak
Printed Name: Jim Jakobiak
Firm: SSP
Date/Time: 4/13/99

RECEIVED BY:
Signature: [illegible]
Printed Name: [illegible]
Firm: CAS
Date/Time: 4/13/99 300

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
X Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No: K9902273

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
Arsenic, Barium, Cadmium, Chromium, Lead
Mercury, Selenium, Silver - TCLP Metals EPA Method 1311

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

SCHN00244414

WASTE MANAGEMENT

17629 Cedar Springs Lane
Arlington, Oregon 97812
(541) 454-2030

FAX TRANSMISSION COVER SHEET

DATE: AUGUST 4/1999

TO: JAMES L. JAKUBIAK Fax # 503-286-6948

* Fax #

* Fax #

FROM: SAMIR. JIRIES

COMMENTS: JAMES: PLEASE SEND A NEW HARD COPY OF THE LETTER AND A REVISED TABLE 1 GOING BACK TO 1/97. ADJUST STASTICAL EVALUATION ACCORDINGLY.

NUMBER OF PAGES INCLUDING COVER SHEET 34

If all pages do not transmit legibly, please call PHIL at (541) 454-~~3233~~ 3341

Lower Admin Building/EMD	Fax (541) 454-3227
Accounts Payable Department	Fax (541) 454-3247
Upper Admin/Customer Service/Accounts Receivable	Fax (541) 454-3279
Lab/Facility Services/Technical Manager	Fax (541) 454-3282
Transportation/Dispatch/Maintenance	Fax (541) 454-3264

SCHNITZER STEEL PRODUCTS CO.

1200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210 Phone 503/224-9900 Telex/W.U. 38-0144

July 21, 1999

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: April 1999 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on April 9, 1999, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Kelso, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8082. for the past two years

ASR sample analytical data are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of the laboratory report is attached.

Please contact me at (503) 286-6976 if you have questions.

Sincerely,
Schnitzer Steel Products Co.

James L. Jakubiak
Environmental Administrator

Use data going back to 1/97.

Attachments: Table 1
Laboratory Report

cc: Tom Zelenka, Schnitzer Steel
Robert Anderson, Waste Management

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	4/99	ND	1.1	0.73	0.05	2.21	ND	ND	ND	NA
2		ND	1.4	0.59	0.08	2.12	ND	ND	ND	NA
3		0.1	1.6	0.41	0.07	3.33	ND	ND	ND	NA
4		ND	1.4	1.45	0.08	~~8.88~~ 8.80	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	20
6		NA	NA	NA	NA	NA	NA	NA	NA	17
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.1 0.01	0.3
Average		0.1	1.38	0.8	0.07	4.12	0.001	0.1	0.1	18.5
1	10/98	ND[b]	0.7	0.09	0.04	1.77	ND	ND	ND	NA[c]
2		ND	1.1	0.08	0.03	1.80	ND	ND	ND	NA
3		ND	1.2	0.14	0.04	2.85	ND	ND	ND	NA
4		ND	1.2	0.14	0.04	2.18	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	21.0
6		NA	NA	NA	NA	NA	NA	NA	NA	14.2
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.1[e]
Average		0.1	1.05	0.11	0.04	2.15	0.001	0.1	0.01	17.6
1	5/98	ND	1.7	0.32	ND	0.42	ND	ND	ND	NA
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL		0.1	0.5	0.01	0.01	0.01	0.001	0.1	0.01	0.1
Average		0.1	1.33	0.49	0.05	0.82	0.001	0.1	0.01	10

5. As required by Condition 34 of Schedule D of Solid Waste Disposal Permit No. 391, the permittee must immediately notify the Department's Eastern Region Office in Pendleton at 276-4063 of any fire which involves combustion of residue ADC or stockpiled residue. The permittee must submit a written report to the Department within seven calendar days of the fire. The report must describe the procedures used to extinguish the fire and to properly dispose of the combustion residue.. The report must also describe any operational procedure revisions (such as construction of additional fire barriers in the waste lifts or increasing the thickness of the fire barrier layer) which will be implemented to reduce the possibility of future fires. In the event of a fire involving combustion of significant quantities of residue, the permittee must suspend use of residue until such time as the Department approves the revised fire control procedures. The permittee is not required to suspend use of residue as ADC in the event of a quickly-extinguished surface fire involving combustion of incidental quantities of residue.

6. The permittee must continue to analyze the residue according to Schnitzer Steel's sampling and analysis plan dated May, 1995 and EPA's guidance document. Results must be submitted to the Department for review on a semi-annual basis for the previous 2 year sampling period.

7. The Department may revoke this authorization if, in the Department's opinion, continued use or residue as ADC would present unacceptable environmental risks.

8. Additional information obtained by the permittee or by the Department describing residue use as ADC at other municipal solid waste landfills should be shared as soon as it becomes available.

If the Department develops a formal policy on ADC or the Commission adopts rules that address ADC, please be advised that if any adjustments are made to the criteria we currently use to make our ADC determinations, such adjustments will also apply to this determination.

If you have any questions regarding this approval or if we may be of further assistance, please contact Tim Davison at (503) 278-4611.

Sincerely,

Henry T. Preston

for Stephanie Hallock
Administrator
Eastern Region, DEQ

Enc: Memo - Schnitzer's Auto Shredder Fluff as Alternative Daily Cover at OWS
Review Report - Special Waste Analysis of Auto Shredder Residue
Review Report - Evaluation of Automobile Shredder Residue Suitability for Use as Alternative Daily Cover

B

Date	Cd (ppm)	Squared Cd	Pb (ppm)	Squared Pb	PCB(ppm)
01/16/97	0.62	0.3844	2.81	7.8961	22.6
	0.47	0.2209	1.93	3.7249	45.1
	0.65	0.4225	0	0	
	0.48	0.2304	1.94	3.7636	
08/25/97	0.37	0.1369	1.52	2.3104	
	0.24	0.0576	0.92	0.8464	
	0.38	0.1444	2.38	5.6644	57
	0.4	0.16	1.53	2.3409	25
12/08/97	0.14	0.0196	1.53	2.3409	26.6
	0.23	0.0529	1.71	2.9241	28.9
	0.14	0.0196	1.48	2.1904	
	0.25	0.0625	2.02	4.0804	
05/13/98	0.32	0.1024	0.42	0.1764	6
	1.06	1.1236	0.54	0.2916	14
	0.34	0.1156	1.71	2.9241	
	0.25	0.0625	0.61	0.3721	
10/29/98	0.09	0.0081	1.77	3.1329	21
	0.08	0.0064	1.8	3.24	14.2
	0.14	0.0196	2.85	8.1225	
	0.14	0.0196	2.18	4.7524	
04/09/99	0.73	0.5329	2.21	4.8841	20
	0.59	0.3481	2.12	4.4944	17
	0.41	0.1681	3.33	11.0889	
	1.45	2.1025	8.8	77.44	

Sum	9.97	6.52	48.11	159.00	297.40
Number of samples	24		24		12
Average	0.42		2.00		24.78
Median	0.36		1.79		21.80
Variance	0.10		2.72		195.87
Standard Deviation	0.32		1.65		14.00
T-Value for Conf. Limit	2.07		2.07		2.20
T-Value for Hypothesis	1.71		1.71		1.80
Lower Confidence Limit	0.28		1.31		15.89
Upper Confidence Limit	0.55		2.70		33.67
Cut-Off Value	1.11		5.58		57.27

SCHN00244419

B

Squared PCBs
510.76
2034.01
3249
625
707.56
835.21
36
196
441
201.64
400
289
[redacted]
9525.18

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 289875 FAX (503) 286-6948

August 4, 1999

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: April 1999 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on April 9, 1999, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Kelso, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8082.

ASR sample analytical data dating back to January 1997 are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of the laboratory report is attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

James L. Jakubiak

James L. Jakubiak
Environmental Administrator

Attachments: Table 1
Laboratory Report

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	4/99	ND	1.1	0.73	0.05	2.21	ND	ND	ND	NA
2		ND	1.4	0.59	0.08	2.12	ND	ND	ND	NA
3		0.1	1.6	0.41	0.07	3.33	ND	ND	ND	NA
4		ND	1.4	1.45	0.08	8.80	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	20
6		NA	NA	NA	NA	NA	NA	NA	NA	17
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.3
Average		0.1	1.38	0.8	0.07	4.12	0.001	0.1	0.01	18.5
1	10/98	ND[b]	0.7	0.09	0.04	1.77	ND	ND	ND	NA[c]
2		ND	1.1	0.08	0.03	1.80	ND	ND	ND	NA
3		ND	1.2	0.14	0.04	2.85	ND	ND	ND	NA
4		ND	1.2	0.14	0.04	2.18	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	21.0
6		NA	NA	NA	NA	NA	NA	NA	NA	14.2
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.1[e]
Average		0.1	1.05	0.11	0.04	2.15	0.001	0.1	0.01	17.6
1	5/98	ND	1.7	0.32	ND	0.42	ND	ND	ND	NA
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL		0.1	0.5	0.01	0.01	0.01	0.001	0.1	0.01	0.1
Average		0.1	1.33	0.49	0.05	0.82	0.001	0.1	0.01	10

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	12/97	ND	0.9	0.14	0.04	1.53	ND	ND	ND	NA
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
6		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
5		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.1	0.5	0.01	0.01	0.05	0.0001	0.1	0.01	0.1
Average		0.1	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.5	0.5	0.01	0.01	0.2	0.0002	0.25	0.01	2.0
Average		0.05	1.01	0.56	0.03	1.72	0.0002	0.26	0.01	33.85
OVERALL:										
Average		--	--	0.42	--	2.00	--	--	--	24.78
Median		--	--	0.36	--	1.79	--	--	--	21.80

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
Variance		--	--	0.10	--	2.72	--	--	--	195.87
Standard Dev.		--	--	0.32	--	1.65	--	--	--	14.00
T-Value (CL)		--	--	2.07	--	2.07	--	--	--	2.20
T-Value (Hyp.)		--	--	1.71	--	1.71	--	--	--	1.80
LCL		--	--	0.28	--	1.31	--	--	--	15.89
UCL		--	--	0.55	--	2.70	--	--	--	33.67
Cut-off Value		--	--	1.11	--	5.58	--	--	--	57.27

NOTE:

[a] PCBs are reported as the sum of all detected Aroclors.

[b] ND - Not detected at or above the method reporting limit.

[c] NA - Not analyzed.

[d] MRL - Method reporting limit.

[e] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

April 26, 1999

Service Request No: K9902273

Jim Jakubiak
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97296-0047

Re: Schnitzer Steel

Dear Jim:

Enclosed are the results of the sample(s) submitted to our laboratory on April 13, 1999. For your reference, these analyses have been assigned our service request number K9902273.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jacky
Project Chemist

HJ/klg

317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Schenitzer Steel Products Co.	**Service Request No.:**	K9902273
Project:	Schnitzer Steel	**Date Received:**	4/9/99
Sample Matrix:	Solid		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Polychlorinated Biphenyls (PCBs) - EPA Method 8082:

The PCB MRL is elevated for samples 5 and 6 because of required dilutions that were neceassary because of matrix interference.

The Decachlorobiphenyl surrogate recovery for EPA Method 8082 in samples 5 and 6 were not calculated. The analysis of these samples required dilutions which resulted in a surrogate concentration below the Method Reporting Limit (MRL). No further corrective action was taken.

No other difficulties were experienced during analysis of this batch.

Approved by _____ **Date** 4/26/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9902273-001	K9902273-002	K9902273-003
			Date Analyzed:	4/18, 22/99	4/18, 22/99	4/18, 22/99
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010B	0.1	5	ND	ND	0.1
Barium	3010A/6010B	0.5	100	1.1	1.4	1.6
Cadmium	3010A/6010B	0.01	1	0.73	0.59	0.41
Chromium	3010A/6010B	0.01	1	0.05	0.08	0.07
Lead	3010A/6010B	0.05	5	2.21	2.12	3.33
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 4/23/99

TCLP/102194
02273ICP.BR1 - Sample 4/23/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Schnitzer Steel Products Co.
Project: Schnitzer Steel
Sample Matrix: Solid

Service Request: K9902273
Date Collected: 4/9/99
Date Received: 4/13/99
Date TCLP Performed: 4/15/99
Date Extracted: 4/16/99

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	Method Blank
			Lab Code:	K9902273-004	K9902273-MB
			Date Analyzed:	4/18, 22/99	4/18, 22/99
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010B	0.1	5	ND	ND
Barium	3010A/6010B	0.5	100	1.4	ND
Cadmium	3010A/6010B	0.01	1	1.45	ND
Chromium	3010A/6010B	0.01	1	0.08	ND
Lead	3010A/6010B	0.05	5	8.80	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 4/23/99

TCLP/102194
022731CP.BR1 - Sample (2) 4/23/99

Page No.:

SCHN00244429

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date Extracted:	4/15/99

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082
Units: mg/Kg (ppm)
As Received Basis

	Sample Name:	**5**	**6**	**Method Blank**
	Lab Code:	K9902273-005(D)	K9902273-006(D)	K990415-MB
	Date Analyzed:	4/16/99	4/16/99	4/16/99
Analyte	**MRL**			
Aroclor 1016	0.3	<3.0	<3.0	ND
Aroclor 1221	0.3	<3.0	<3.0	ND
Aroclor 1232	0.3	<3.0	<3.0	ND
Aroclor 1242	0.3	20	17	ND
Aroclor 1248	0.3	<3.0	<3.0	ND
Aroclor 1254	0.3	<3.0	<3.0	ND
Aroclor 1260	0.3	<3.0	<3.0	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 4/22/99

3S22MDL/120594
02273SVG.AY1 - 5-MB 4/22/99

APPENDIX A
LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99
		Date Analyzed:	4/18, 22/99

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 1
Lab Code: K9902273-001MS

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	4.6	92
Barium	5	1.1	5.5	88
Cadmium	1	0.73	1.55	82
Chromium	5	0.05	4.36	86
Lead	5	2.21	6.28	81
Mercury	5	ND	0.005	100
Selenium	1	ND	0.99	99
Silver	1	ND	0.77	77

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 4/23/99

TCLPMS/102194
02273ICP.BR1 - Spike 4/23/99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Schnitzer Steel Products Co
Project: Schnitzer Steel
Sample Matrix: Solid

Service Request: K9902273
Date Collected: 4/9/99
Date Received: 4/13/99
Date Extracted: 4/15/99
Date Analyzed: 4/16/99

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082

Sample Name	Lab Code	Percent Recovery Decachlorobiphenyl
5	K9902273-005	NA
6	K9902273-006	NA
Method Blank	K990415-MB	98

CAS Acceptance Limits: 42-130

NA Not Applicable; see case narrative.

Approved By: _____ Date: _____

SUR1/120594
02273SVG.AY1 - SUR1 4/26/99

Columbia Analytical Services inc.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

DATE 4/13/99 PAGE 1 OF 1

PROJECT NAME Schnitzer Steel Products, Inc.

PROJECT MANAGER Jim Jakobiak

COMPANY/ADDRESS P.O. Box 10047
Portland, Oregon 97210

FAX (503) 286-6948 PHONE (503) 286-6976

SAMPLERS SIGNATURE J. Jakobiak for Bob Geach

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neut/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA/418.1 ☐ ORA/418.1 ☐ WA/418.1 ☐	TPH/Gas/BTEX Gas ☐ BTEX ☐ 5030/8015/8020	TPH/8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/HCID ☐ WA/HCID ☐ OR/HCID ☐	TCLP Metals ☒ VOA ☐	Metals (total or dissolved) List Below	Cyanide	Semi Pest/ VOA ☐ Herb ☐	pH, Cond, Cl, SO_4, NO_2, NO_3, PO_4, F, Br (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650A ☐			REMARKS
1	4/9/99			Solid	1									X									
2	4/9/99			↓	1									X									
3	4/9/99				1									X									
4	4/9/99				1									X									
5	4/9/99				1				X														
6	4/9/99			↓	1				X														

RELINQUISHED BY:
Signature: J. Jakobiak
Printed Name: Jim Jakobiak
Firm: CSP
Date/Time: 4/13/99

RECEIVED BY:
Signature: [illegible]
Printed Name: Ben Moore
Firm: CAS
Date/Time: 4/13/99 300

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
X Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No: K9902273

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
Arsenic, Barium, Cadmium, Chromium, Lead
Mercury, Selenium, Silver - TCLP Metals EPA Method 1311

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

SCHN00244434

COLUMBIA RIDGE LANDFILL & RECYCLING CENTER
A WASTE MANAGEMENT COMPANY

18177 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030
(541) 454-3312 Fax

August 9, 1999

Gerry Preston
Manager, Solid Waste & Tanks
Eastern Region
Oregon Department of Environmental Quality
400 E Scenic Dr., Suite 2-307
The Dalles, OR 97058

RE: Columbia Ridge Landfill and Recycling Center
Results From Schnitzer Steel's Sampling and Analysis of Auto Shredding Residue

Dear Mr. Preston:

In accordance with Condition 6 of your September 18, 1995 approval letter, please find attached the test results and statistical summary for Schnitzer Steel's automobile shredder residue (ASR) for the previous two years. Also attached is a letter from Schnitzer Steel which accompanied the test results.

As indicated by Mr. James Jakubiak, of Schnitzer Steel Products Co., the most recent sampling of the ASR was conducted on April 9, 1999 in accordance with Schnitzer Steel's May 1995 Sampling and Analysis Plan and statistically evaluated by methods described in the EPA publication "Scrap Metal Shredder Sampling Guidance Document" dated August, 1993. Based on the statistical summary provided in Table 1, the analysis has demonstrated a 95% confidence level for the cadmium, lead, and PCB concentrations which are below regulatory levels. In addition, the analysis indicates that the average concentration of the contaminants is below the cut-off value.

If you have any questions regarding this submittal please contact me at 541-454-3201.

Sincerely,
Columbia Ridge Landfill and Recycling Center

Samir M. Jiries
Environmental Manager

c: Ken Lucas, ODEQ, Solid Waste, The Dalles office
Steve Seed, Landfill Manager, CRLRC
James L. Jakubiak, Environmental Administrator, Schnitzer Steel Products Co.

C:\Msoffice\Winword\PKLetter\DEQ97.doc

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 289875 FAX (503) 286-6948

August 4, 1999

Mr. Samir Jiries
Oregon Waste Systems, Inc.
Columbia Ridge Landfill and Recycling Center
18177 Cedar Springs Lane
Arlington, OR 97812

Re: April 1999 Automobile Shredder Residue Laboratory Results

Dear Mr. Jiries:

Samples of automobile shredder residue (ASR) produced at our Portland recycling facility were collected on April 9, 1999, consistent with the May 1995 sampling and analysis plan. The samples were transported under chain-of-custody to Columbia Analytical Services in Kelso, Washington and analyzed for metals and polychlorinated biphenyls by U.S. Environmental Protection Agency methods 1311, 6010, 7470, and 8082.

ASR sample analytical data dating back to January 1997 are summarized on Table 1. Data for chromium, lead, and PCBs were statistically evaluated by methods described in the August 1993 U.S. Environmental Protection Agency scrap metal shredder sampling guidance document. A copy of the laboratory report is attached.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

James L. Jakubiak

James L. Jakubiak
Environmental Administrator

Attachments: Table 1
Laboratory Report

cc: Tom Zelenka

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCB
1	4/99	ND	1.1	0.73	0.05	2.21	ND	ND	ND	NA
2		ND	1.4	0.59	0.08	2.12	ND	ND	ND	NA
3		0.1	1.6	0.41	0.07	3.33	ND	ND	ND	NA
4		ND	1.4	1.45	0.08	8.80	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	20
6		NA	NA	NA	NA	NA	NA	NA	NA	17
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.3
Average		0.1	1.38	0.8	0.07	4.12	0.001	0.1	0.01	18.5
1	10/98	ND	0.7	0.09	0.04	1.77	ND	ND	ND	NA
2		ND	1.1	0.08	0.03	1.80	ND	ND	ND	NA
3		ND	1.2	0.14	0.04	2.85	ND	ND	ND	NA
4		ND	1.2	0.14	0.04	2.18	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	21.0
6		NA	NA	NA	NA	NA	NA	NA	NA	14.2
MRL[d]		0.1	0.5	0.01	0.01	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.05	0.11	0.04	2.15	0.001	0.1	0.01	17.6
1	5/98	ND	1.7	0.32	ND	0.42	ND	ND	ND	NA
2		ND	1.4	1.06	0.06	0.54	ND	ND	ND	NA
3		ND	1.0	0.34	0.11	1.71	ND	ND	ND	NA
4		ND	1.2	0.25	ND	0.61	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	6
6		NA	NA	NA	NA	NA	NA	NA	NA	14
MRL		0.1	0.5	0.01	0.01	0.01	0.001	0.1	0.01	0.1
Average		0.1	1.33	0.49	0.05	0.82	0.001	0.1	0.01	10

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
1	12/97	ND	0.9	0.14	0.04	1.53	ND	ND	ND	NA
2		ND	1.6	0.23	0.06	1.71	ND	ND	ND	NA
3		ND	2.34	0.14	0.04	1.48	ND	ND	ND	NA
4		ND	1.36	0.25	0.06	2.02	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	26.6
6		NA	NA	NA	NA	NA	NA	NA	NA	28.9
MRL		0.1	0.50	0.01	0.05	0.05	0.001	0.1	0.01	0.1
Average		0.1	1.55	0.19	0.05	1.69	0.001	0.1	0.01	27.8
1	8/97	NA	NA	NA	NA	NA	NA	NA	NA	57
2		NA	NA	NA	NA	NA	NA	NA	NA	25
3		ND	1.4	0.37	0.02	1.52	ND	ND	ND	NA
4		ND	1.4	0.24	0.02	0.92	ND	ND	ND	NA
6		ND	1.7	0.38	0.03	2.38	ND	ND	ND	NA
5		ND	1.5	0.4	0.01	1.53	ND	ND	ND	NA
MRL		0.1	0.5	0.01	0.01	0.05	0.0001	0.1	0.01	0.1
Average		0.1	1.5	0.35	0.02	1.58	0.0001	0.1	0.01	41
1	1/97	ND	0.8	0.62	0.021	2.81	0.0005	ND	ND	NA
2		ND	1.1	0.47	0.038	1.93	0.0003	0.26	ND	NA
3		ND	1.1	0.65	ND	ND	0.0005	ND	ND	NA
4		ND	1.03	0.48	0.041	1.94	ND	ND	ND	NA
5		NA	NA	NA	NA	NA	NA	NA	NA	22.6
6		NA	NA	NA	NA	NA	NA	NA	NA	45.1
MRL		0.5	0.5	0.01	0.01	0.2	0.0002	0.25	0.01	2.0
Average		0.05	1.01	0.56	0.03	1.72	0.0002	0.26	0.01	33.85
OVERALL:										
Average		--	--	0.42	--	2.00	--	--	--	24.78
Median		--	--	0.36	--	1.79	--	--	--	21.80

Table 1
ASR Sample Results
Schnitzer Steel Industries, Inc.
Portland, Oregon
(mg/kg)

Sample		USEPA Methods								
		1311/6010/7470								8080/8082
Number	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	PCBs[a]
Variance		--	--	0.10	--	2.72	--	--	--	195.87
Standard Dev.		--	--	0.32	--	1.65	--	--	--	14.00
T-Value (CL)		--	--	2.07	--	2.07	--	--	--	2.20
T-Value (Hyp.)		--	--	1.71	--	1.71	--	--	--	1.80
LCL		--	--	0.28	--	1.31	--	--	--	15.89
UCL		--	--	0.55	--	2.70	--	--	--	33.67
Cut-off Value		--	--	1.11	--	5.58	--	--	--	57.27

NOTE:

[a] PCBs are reported as the sum of all detected Aroclors.

[b] ND - Not detected at or above the method reporting limit.

[c] NA - Not analyzed.

[d] MRL - Method reporting limit.

[e] PCB MRL is for individual Aroclors; MRLs vary and are elevated due to matrix interference.

Columbia Analytical Services INC.
An Employee-Owned Company

April 26, 1999

Service Request No: K9902273

Jim Jakubiak
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97296-0047

Re: Schnitzer Steel

Dear Jim:

Enclosed are the results of the sample(s) submitted to our laboratory on April 13, 1999. For your reference, these analyses have been assigned our service request number K9902273.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jacky
Project Chemist

HJ/klg

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Schenitzer Steel Products Co.	**Service Request No.:**	K9902273
Project:	Schnitzer Steel	**Date Received:**	4/9/99
Sample Matrix:	Solid		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Polychlorinated Biphenyls (PCBs) - EPA Method 8082:

The PCB MRL is elevated for samples 5 and 6 because of required dilutions that were neceassary because of matrix interference.

The Decachlorobiphenyl surrogate recovery for EPA Method 8082 in samples 5 and 6 were not calculated. The analysis of these samples required dilutions which resulted in a surrogate concentration below the Method Reporting Limit (MRL). No further corrective action was taken.

No other difficulties were experienced during analysis of this batch.

Approved by _____ **Date** 4/26/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	1	2	3
			Lab Code:	K9902273-001	K9902273-002	K9902273-003
			Date Analyzed:	4/18, 22/99	4/18, 22/99	4/18, 22/99
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Arsenic	3010A/6010B	0.1	5	ND	ND	0.1
Barium	3010A/6010B	0.5	100	1.1	1.4	1.6
Cadmium	3010A/6010B	0.01	1	0.73	0.59	0.41
Chromium	3010A/6010B	0.01	1	0.05	0.08	0.07
Lead	3010A/6010B	0.05	5	2.21	2.12	3.33
Mercury	7470A	0.001	0.2	ND	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 4/23/99

TCLP/102194
02273ICP.BR1 - Sample 4/23/99

Page No.:

SCHN00244443

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	4	**Method Blank**
			Lab Code:	K9902273-004	K9902273-MB
			Date Analyzed:	4/18, 22/99	4/18, 22/99
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***		
Arsenic	3010A/6010B	0.1	5	ND	ND
Barium	3010A/6010B	0.5	100	1.4	ND
Cadmium	3010A/6010B	0.01	1	1.45	ND
Chromium	3010A/6010B	0.01	1	0.08	ND
Lead	3010A/6010B	0.05	5	8.80	ND
Mercury	7470A	0.001	0.2	ND	ND
Selenium	3010A/6010B	0.1	1	ND	ND
Silver	3010A/6010B	0.01	5	ND	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 4/23/99

TCLP/102194
022731CP.BR1 - Sample (2) 4/23/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date Extracted:	4/15/99

Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082
Units: mg/Kg (ppm)
As Received Basis

	Sample Name:	**5**	**6**	**Method Blank**
	Lab Code:	K9902273-005(D)	K9902273-006(D)	K990415-MB
	Date Analyzed:	4/16/99	4/16/99	4/16/99
Analyte	**MRL**			
Aroclor 1016	0.3	<3.0	<3.0	ND
Aroclor 1221	0.3	<3.0	<3.0	ND
Aroclor 1232	0.3	<3.0	<3.0	ND
Aroclor 1242	0.3	20	17	ND
Aroclor 1248	0.3	<3.0	<3.0	ND
Aroclor 1254	0.3	<3.0	<3.0	ND
Aroclor 1260	0.3	<3.0	<3.0	ND

D The MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: _____ Date: 4/22/99

3S22MDL/120594
022738VGLAY1 - 5-MB 4/22/99

APPENDIX A
LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date TCLP Performed:	4/15/99
		Date Extracted:	4/16/99
		Date Analyzed:	4/18, 22/99

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: 1
Lab Code: K9902273-001MS

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Arsenic	5	ND	4.6	92
Barium	5	1.1	5.5	88
Cadmium	1	0.73	1.55	82
Chromium	5	0.05	4.36	86
Lead	5	2.21	6.28	81
Mercury	5	ND	0.005	100
Selenium	1	ND	0.99	99
Silver	1	ND	0.77	77

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 4/23/99

TCLPMS/102194
02273ICP.BR1 - Spike 4/23/99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co	**Service Request:**	K9902273
Project:	Schnitzer Steel	**Date Collected:**	4/9/99
Sample Matrix:	Solid	**Date Received:**	4/13/99
		Date Extracted:	4/15/99
		Date Analyzed:	4/16/99

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3540B/8082

Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
5	K9902273-005	NA
6	K9902273-006	NA
Method Blank	K990415-MB	98

CAS Acceptance Limits: 42-130

NA Not Applicable; see case narrative.

Approved By: _____ Date: _____

SUR1/120594
02273SVGLAY1 - SUR1 4/26/99

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services inc. 1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

DATE 4/13/99 PAGE 1 OF 1

PROJECT NAME Schnitzer Steel Products, Inc #
PROJECT MANAGER Jim Jakubiak
COMPANY/ADDRESS P.O. Box 10047
Portland, Oregon 97210
FAX (503) 286-6948 PHONE (503) 286-6976
SAMPLERS SIGNATURE Jim Jakubiak for Bob Geach

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA418.1 ☐ OR418.1 ☐ WA418.1 ☐	TPH/Gas/BTEX Gas ☐ BTEX ☐ 5030/8015/8020	TPH/8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/HCID ☐ WA/HCID ☐ OR/HCID ☐	TCLP Metals ☒	Semi Pest/ VOA ☐ VOA ☐ Herb ☐	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX)	1650A ☐			REMARKS
1	4/9/99			Solid	1									X										
2	4/9/99			↓	1									X										
3	4/9/99				1									X										
4	4/9/99				1									X										
5	4/9/99				1				X															
6	4/9/99			↓	1				X															

RELINQUISHED BY:
Signature: Jim Jakubiak
Printed Name: Jim Jakubiak
Firm: SSP
Date/Time: 4/13/99

RECEIVED BY:
Signature: [illegible]
Printed Name: [illegible]
Firm: CAS
Date/Time: 4/13/99 3:00

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
X Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (Includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No: K9902223

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
Arsenic, Barium, Cadmium, Chromium, Lead
Mercury, Selenium, Silver - TCLP Metals EPA Method 1311

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-06

SCHN00244449

cascade steel rolling mills, inc.

P.O. Box 687
3200 North Highway 99W
McMinnville, Oregon 97128-9399

(503) 472-4181 Portland 222-6824
TWX 910-452-7011 Telefax (503) 434-5739

FACSIMILE TELECOPY TRANSMISSION

503/434-5739

COMPANY TO: Waste MGMT

FAX NO : (303) 797 - 9504

ATTENTION : Bruce Clabaugh

FROM : Daniel Lee

DATE : 4/12/95

This set consists of _____ pages including cover page.

==========

MESSAGE

Enclosed for your review is auto Fluff sample results. We understand that schnitzer will sample the fluff once every six month begining of May 1995. Pls give me a call at (503) 434-3324. Let's talk about it. Thanks

***If you do not receive this transmission in its entirety, or if you have received this transmission in error, please call us immediately at 503/472-4181. This transmission may include confidential information and is intended only for the individual or entity named above. Any person other than the intended recipient (or others authorized by the intended recipient) is prohibited from reading, copying, or distributing this transmission.

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.U.36-0144 FAX 503/323-2793

April 6, 1995

Ms. Andrea Christman
Waste Management of North America, Inc.
4020 Lake Washington BLVD. NE
Suite 310
Kirkland, WA 98033

Dear Ms. Christman:

Enclosed is a report of shredder residue sample analytical results. Sampling was conducted on March 7, 1995. Following is a summary table of the sampling results:

Auto Fluff TCLP Analysis:

Date	Analysis	Analytical Results	EPA Limit	Units
3/7/95	Arsenic	ND	5.0	mg/L
	Barium	1.4	100.0	mg/L
	Cadmium	0.1	1.0	mg/L
	Chromium	0.06	5.0	mg/L
	Lead	0.1	5.0	mg/L
	Mercury	ND	0.2	mg/L
	Selenium	ND	1.0	mg/L
	Silver	ND	5.0	mg/L
	PCBs	16.4 (avg)	49.0	mg/kg

Should you have any questions or need further information, please contact either Daniel Lee at (503) 434-3324 or me at (503) 286-5771.

Sincerely,

Daniel Lee
Environmental Specialist

cc: Daniel Lee, SSP
Ken Irish, OWS

Report Date: March 28, 1995
Job Number: 950310AJ
PO Number: 22929
Project No: None Provided
Project Name: ASR #1 3-7-95

Keith Lawson
Schnitzer Steel Industries, Inc
P.O. Box 10047
Portland, OR 97233

Analytical Narrative

The sample was received on 03/10/95 by Coffey Laboratories, Inc. (CLI) Sample Reception personnel under strict chain of custody protocol. The following information was provided at the time of sample reception:

Laboratory Sample ID	Field Identification	Matrix	Collection Date	Collection Time
950310AJ-1	ASR #1	Solid	03/07/95	NP

The recommended holding time for each batch of analyses was in accordance with the data quality objectives as specified in the CLI Quality Assurance Plan unless otherwise noted.

Acceptable precision and accuracy were achieved for all analyses associated with this work order as demonstrated by the recoveries of the quality control samples analyzed concurrently with each batch.

The data submitted in this report is for the sole and exclusive use of the above-named client. All samples associated with the work order will be retained a maximum of 15 days from the report date or until the maximum holding time expires. All results pertain only to samples submitted.

Thank you for allowing Coffey Laboratories to be of service to you. If you have questions or need further assistance, please do not hesitate to call our Customer Services Department.

Sincerely,

Rona A. Klueh
Technical Director

RAK/atc

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Analytical Data

Schnitzer Steel Industries,Inc

Job Number: 950310AJ
Page Number: 2 of 2

Lab Sample ID: 950310AJ-1
Field ID: ASR #1
Date/Time: 03/07/95
Matrix: Solid

SUBJECT: TCLP Analysis

Analyte	Method	Detection Limit	Analytical Results	EPA Limit	Units
Arsenic	*	0.1	ND	5.0	mg/L
Barium	*	0.004	1.4	100	mg/L
Cadmium	*	0.01	0.10	1.0	mg/L
Chromium	*	0.02	0.06	5.0	mg/L
Lead	*	0.1	0.1	5.0	mg/L
Mercury	*, 7470	0.05	ND	0.2	mg/L
Selenium	*	0.2	ND	1.0	mg/L
Silver	*	0.1	ND	5.0	mg/L

means none detected at or above the detection limit listed.

* Leachate preparation by EPA SW-846 Method 1311. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise noted.

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

Report Date: March 16, 1995
Job#: GE-950310AL-1
PO#: 22928
Project#: None Provided
Project: ASR #1 PCB 3-7-95

Keith Lawson
Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97233

SAMPLE INFORMATION:
Date Samples Were Received By Laboratory:

Lab No.	Field Identification	Sample Matrix	Date	Time
1	ASR #1 PCB	Solid	03-07-95	NP

ANALYTICAL RESULTS:

Analysis Performed: PCBs in solid by modified EPA Method 8080, GC/ECD

Sample ID	PCB	Aroclor	Units
ASR #1 PCB	23	1242	mg/Kg
ASR #1 PCB	9.8	1254	mg/Kg
R #1 PCB Duplicate	14	1242	mg/Kg
R #1 PCB Duplicate	21	1260	mg/Kg

14 + 9.8 = 18.5

Sincerely,

Susan M. Coffey
President

SMC/daj

This report is for the sole and exclusive use of the above-named client. Samples are retained 15 days from the report date, or until holding time expires. Results pertain only to samples submitted.

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Tom Zelenka	From Daniel
Co. SSI	Co. CSRM
Dept.	Phone # 434-3324
Fax # 2804	Fax #

COFFEY LABORATORIES, INC.
12423 N.E. Whitaker Way • Portland, OR • 97230 • (503) 254-1794 • FAX (503) 254-1452

PROTOCOLS FOR

SAMPLING, ANALYSIS AND DATA REVIEW

OF SHREDDER RESIDUE

PREPARED FOR

SCHNITZER STEEL PRODUCTS COMPANY

PORTLAND, OREGON

OCTOBER, 1994

REVISED MAY 1995

(by Schnitzer)

W.Z. Baumgartner & Associates, Inc

Consulting Engineers

P.O. Box 786

Brentwood, Tennessee 37024-0786

94011

PROTOCOLS FOR

SAMPLING, ANALYSIS AND DATA REVIEW

OF SHREDDING RESIDUE

TABLE OF CONTENTS

	PAGE
A. Purpose of Sampling Protocol	3
B. General Sampling Procedure	4
C. Contemporaneous Generation Sampling Procedures ...	5
D. Waste Pile Sampling Procedures	6
E. Sample Containers And Chain-of-Custody Procedures.	8
F. Sample Processing and Analysis	9
G. Date Review - Contemporaneous Generation	11
H. Data Review - Waste Pile	12

SCHN00244457

PROTOCOLS FOR

SAMPLING, ANALYSIS AND DATA REVIEW

OF SHREDDER RESIDUE

A. PURPOSE OF SAMPLING PROTOCOL

Shredder residue which is produced by the shredding of automobiles and scrap light iron is inherently non-homogeneous in nature. Because of the nature of the waste material and a basic lack of understanding of its properties, improper characterization has been a common problem.

This sampling protocol has been developed by W. Z. Baumgartner & Associates, Inc. The basic protocol has been adopted by several state regulatory agencies and is recognized by most of the major solid waste management firms.

SCHN00244458

B. GENERAL SAMPLING PROCEDURE

During sampling events, appropriate health and safety equipment should be worn. Minimum personal safety equipment should include steel-toed boots, sturdy gloves, hard-hat, and safety glasses. A fully stocked first-aid kit should be on-site and readily available.

All samples are to be collected by a qualified technician familiar with the shredding process and the characteristics of shredder residue.

When sampling contemporaneously generated shredder residue, normal plant operation should be confirmed with management prior to initiation of sample collection to ensure all equipment in working order, and the infeed material should be representative of the facility's normal operation.

A 55 gallon drum with a plastic liner may be used for shredder residue sample collection. It is understood that while there may be a slight possibility of low level intrusion of phthalate into a sample from the plastic containers, the high concentration of phthalate in the shredder residue negate any concern. Detailed decontamination of heavy equipment is not normally necessary because of the volume of material being handled and the fact that the material is mixes by the same
equipment, such as shovels, etc., should be wiped with clean paper towels or washed after each use.

If complete QA/QC documentation is to be supplied or if special samples or sample containers (ie: glass with Teflon lids for PCB or volatile organics analysis) are required, this is to be made to the sample team at least one (1) week before the proposed sample event. All sample preservation, temperature and holding time provisions of EPA SW 846 (latest edition) shall be observed.

SCHN00244459

C. CONTEMPORANEOUS GENERATION SAMPLING PROCEDURES

Contemporaneous sampling as the waste is being generated is the most representative type of sampling and should be used unless there are compelling reasons for using a different method.

During routine monitoring event one 55 gallon drum with a plastic liner may be used for sample storage. During the routine sampling events, normal shredding operation should be maintained. Sampling will continue over a period of approximately 6 to 8 hours. Because of the high volume of material generated this period have been demonstrated to be adequate to produce representative samples. Residue generated in the shredding process is sampled every 30 minutes, generating one 55 gallon composite sample. Three square shovel full of sample, weighing approximately 7 to 8 pounds each, are taken from the conveyer junction of "L" and "N" conveyer and dropped into a plastic bag within a 55 gallon drum receiver every 30 minutes.

The material should be inclusive for both large and small particles in approximate proportion of generation. The sampler is to be familiar with the process generating the waste and the composition of shredder residue in general by experience to avoid weighing the sample inappropriately by particle size, density, or constituency.

At the end of the sampling day, the sample is brought into a clean work area for further preparation.

SCHN00244460

D. WASTE PILE SAMPLING PROCEDURES

In the event contemporaneous sampling is not possible, the following alternative procedure may be used.

Characterization of waste piles presents certain challenges to the sampling team. The procedures presented in this Protocol are consistent with Environmental Protection Agency and Sampling Procedures for Hazardous Waste Streams (600/2-80-018) and Test Methods for Evaluating Solid Waste (SW 846 - 9/86). Sampling points are selected after an inspection of the pile. A blade-equipped front-end loader, backhoe, or dozer should be made available to the sampling team so that the pile can be properly configured for sampling.

For waste pile sampling, a pile of shredder residue equal to at least one-half (1/2) day of normal shredding operation should be accumulated. The pile should be configured by squaring the edges and top. Waste piles can be characterized by selecting three (3) evenly distributed sampling points as shown in Figure No. 1. For larger piles (greater than 100 ft. by 100 ft.) the number of sampling points should be increased to four (4) or five (5). Surface sampling points are selected and diagonals established that terminate at the vase of the pile opposite the surface point. Collection of the center-of-pile samples is facilitated by opening one (1) or more trenches selected so the diagonal middle sampling points pass through each trench.

Figure No. 1 presents a typical waste pile characterized by establishing three (3) diagonal sample lines and one trench. Samples are collected from the top of the pile at major surface points A-1, B-1, and C-1. Approximately two thousand (2,000) grams of representative material is collected at point A-1, B-1, and C-1. Using the blade loader or backhoe, an opening is made at the base of the pile at diagonal points A-3, B-3,, and C-3.
These openings will be approximately three (3) to five (5) feet high and penetrate one (1) to three (3) feet into the pile. To facilitate midpoint sampling, an opening is made midway through the shorter cross-section of the

SCHN00244461

pile. The opening should penetrate approximately one-half to two-thirds through the pile. Samples A-2, B-2, and C-2 are collected at the appropriate midway points on both walls diagonally from the initiation points. Sampling Points D-1, D-2, and D-3 are selected at the discretion of the sampling team.

Sampling should be performed so each sample location is representative of that general area of the pile. samples are collected by "picking" many small aliquots from each selected sample point on the pile and combing these individual aliquots into the specific-location sample. Each sample should contain approximately two thousand (2,000) grams of material. "Picking" can be performed by hand provided the outer gloves are changed between each sample location. If a shovel or other utensil is used to gain access to a location, it is to be cleaned between each location.

The sample protocol should generate a minimum of twelve (12) discrete samples available for analysis from a normal pile. For larger piles (greater than 100 ft. by 100 ft.) additional discrete samples will be generated. As previously stated, all aspects of the sample collection, processing, preservation and analysis shall be conducted in accordance with SW 846 (latest edition).

SCHN00244462

E SAMPLE CONTAINERS AND CHAIN-OF-CUSTODY PROCEDURE

As mentioned in Section A, Heavy duty plastic bags normally may be used for individual samples and, if used, are placed in a larger plastic bucket for secure transport. Each individual sample container is to be labeled as follows:

Sample Location:

Identifying Sample Code and Description:

Time:

Date:

Sampler:

The individual samples are to be carefully packaged in the shipping container. The container is to be sealed for transport to the laboratory. Larger composite samples could be collected using the six gallon containers. As required, the samples may be shipped in rigid, high-impact plastic ice chests. When using commercial carriers, dry ice is not to be used to cool samples. Crushed or cubed ice in plastic bags is preferable for this purpose.

The processor for sample security and Chain-of Custody documentation shall follow EPA document SW 846 (latest edition) as a minimum. Each sample container is to be marked, coded and sealed.

SCHN00244463

F. SAMPLE PROCESSING AND ANALYSIS

Shredder residue normally consists of 55-60%, by weight, of material less than two inches in diameter, while material larger than twoinches in diameter may make up 55-60% of the uncompressed volume. Great care, based upon experience, must be employed to avoid weighting individual aliquots inappropriately by weight, volume, or size and to insure that aliquots are representative of the material generated.

1. Once the sample is collected, the sample is brought into a clean work area for further preparation. The sample is first mixed and spread out to a uniform depth, and then divided into four equal quarters. Two quarters are selected diagonally and mixed again, then spread out to a uniform depth for further division. This mixing and quartering process is repeated until the remaining sample is approximately 50 to 70 pounds. The remaining sample is then passed through a 9.5 mm screen. All material retained on the 9.5 screen is hand cut until all of the sample has passed through the screen. From combination of the material retained on the screen and that passed through the screen, eight 120 - 150 gram samples are taken and sent out to the laboratory for PCB (EPA 8080) and TCLP Heavy metal analysis (EPA 1311)

2. PCB determinations are to be performed by individuals familiar with shredder residue and experienced in determinations performed on samples containing multiple interference. Analysis shall be performed according to EPA Method 8080, with Method 3550 for extraction, solid sonification and electron capture. External standardization shall be employed. The moisture content of one aliquot shall be measured. PCB concentrations will be adjusted to a dry weight basis using the moisture determination.

SCHN00244464

3. A 100 gram aliquot (taken from the material processed in Item #1) is to be used for Method 1311 "Toxicity Characteristic Leaching Procedures" as described in 40 CFR 261, Appendix 2 and EPA SW 846 for extractable heavy metals and semi-volatile organics. If TCLP Method 1311 is to be performed on a sample, strict conformity to the methods and procedures described in SW 846 must be exercised. A separate log entry shall be prepared for each application of the procedure and this log shall be maintained by the laboratory. The log and all other necessary data required for proper completion of the analysis procedure shall be retained for a minimum of three year.

4. Protocols for zero head space extraction, ZHE, for extractable volatile organic compounds are to conform to EPA Method 1311.

5. The laboratory performing the wet chemistry analysis is to be EPA Drinking Water Program approved.

SCHN00244465

G. DATA REVIEW - CONTEMPORANEOUS GENERATION

The normal procedure for contemporaneous sampling is to analyze a progressive number of samples from a sampling event. The following procedures describe a data evaluation for both TCLP extractable heavy metal analyses and PCB determinations:

1. Using the procedures described in Section C, samples are collected.
2. All samples are analyzed for all eight TCLP metals.
3. The arithmetic mean of the results of the samples will be reported.
4. If the mean determined by the method described in item 3 above exceeds an EPA limit for any constituent, a second sampling event will be scheduled within 15 days of the receipt of results to confirm the elevated reading. If the second sampling event fails to confirm the exceedence found in the original sampling event, the exceedence will be considered an anomaly.
5. Other methods of evaluation data such as Sampling Guidance for Scrap Metal Shredders (EPA 747-R-93-009) may be considered.

SCHN00244466

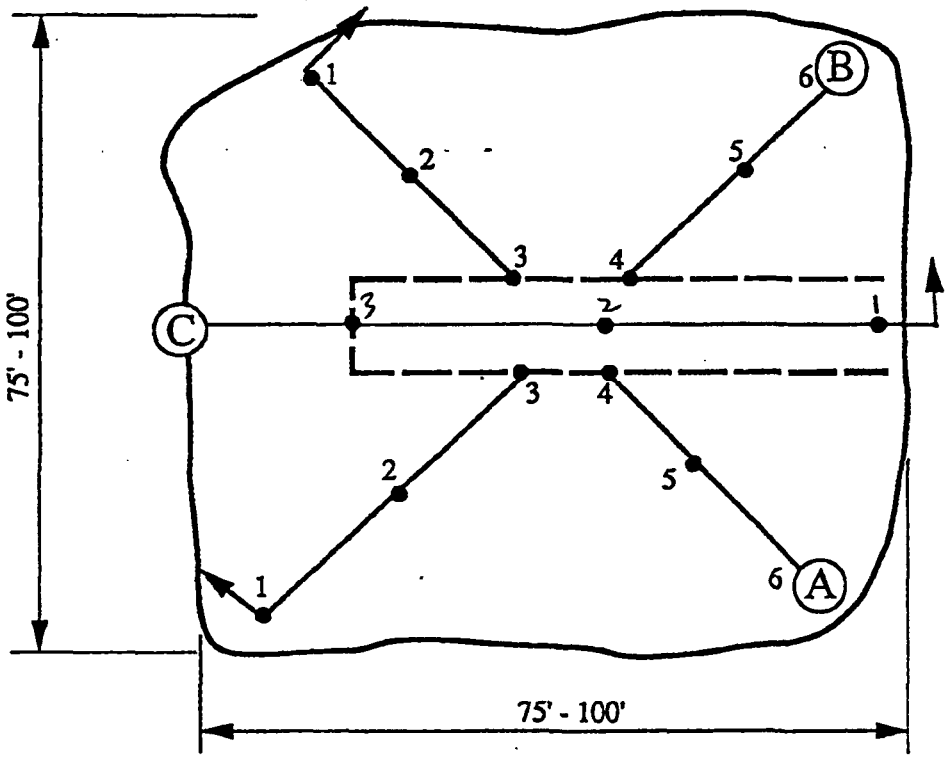
H. DATA REVIEW - WASTE PILE

1. Using the methods described in Section B, Twelve to twenty samples are collected.
2. Since this method is often used to characterize a pole for regulatory compliance, the number of samples to be analyzed should be determined on advance. If no such advance notice is obtained, ten samples will be selected using random numbers.
3. The method for statistically evaluating the data shall be agreed upon in advance.

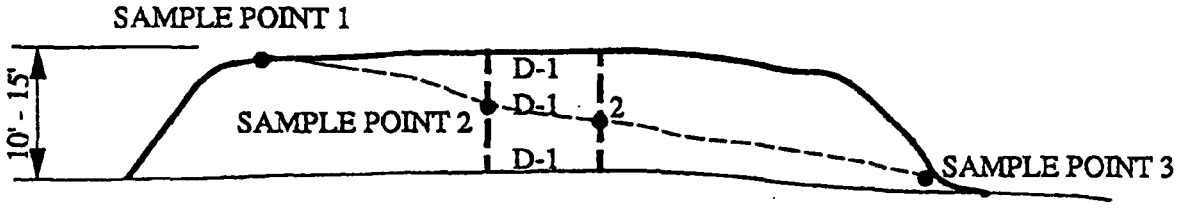
SCHN00244467

EXHIBIT NO. 1

SHREDDER WASTEPILE
TYPICAL SAMPLE POINT SELECTION



PLAN VIEW



CROSS - SECTION
TYPICAL FOR A, B & C

WZB

PROTOCOLS FOR
SAMPLING, ANALYSIS AND DATA REVIEW
OF SHREDDER RESIDUE

PREPARED FOR

SCHNITZER STEEL PRODUCTS COMPANY
PORTLAND, OREGON

FEBRUARY 1993

W. Z. BAUMGARTNER & ASSOCIATES, INC.
Consulting Engineers
P. O. Box 786
Brentwood, Tennessee 37024-0786

80001

WZB

PROTOCOLS FOR
SAMPLING, ANALYSIS AND DATA REVIEW
OF SHREDDER RESIDUE

SCHNITZER STEEL PRODUCTS COMPANY
PORTLAND, OREGON

TABLE OF CONTENTS

		Page
A.	General Sampling Procedure	1
B.	Waste Pile Sampling Procedures	2
C.	Contemporaneous Generation Sampling Procedures	3
D.	Sample Containers and Chain-of-Custody Procedures	4
E.	Sample Processing and Analysis	5
F.	Data Review - Waste Pile	7
G.	Date Review - Contemporaneous Generation	7
H.	Safety Precautions	8

Copyright 1992
All Rights Reserved

d\80001

WZB

(b)(4) copyright

[redacted]

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

(b)(4) copyright

[redacted]

(b)(4) copyright

[redacted]

(b)(4) copyright

[redacted]

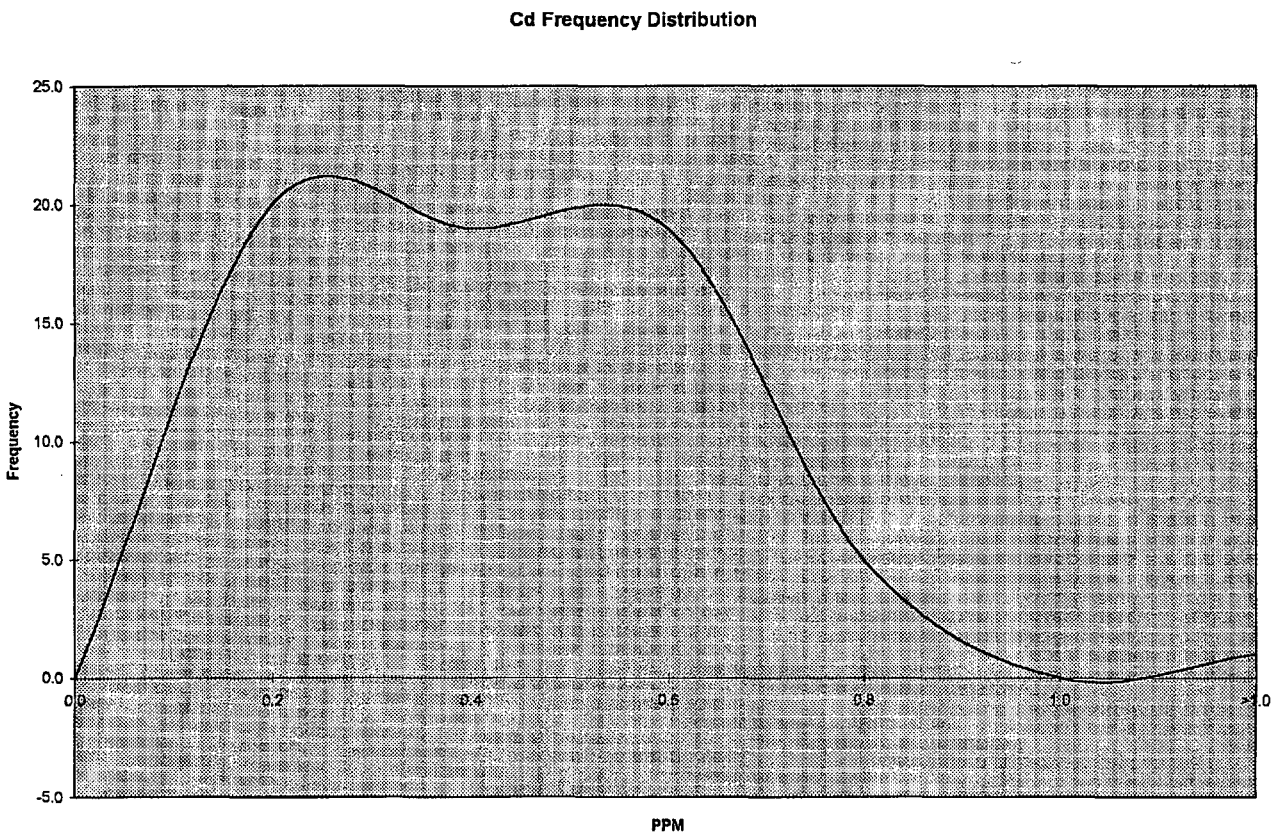
Date	Cadmium(ppm	Squared Cd	Lead(ppm)	Squared Pb	PCB(ppm)	Squared PCBs
3/30/93	0.68	0.4624	3.76	14.1376	2	4
	0.33	0.1089	0.5	0.25	2	4
	0.61	0.3721	1.54	2.3716	2	4
	0.42	0.1764	2.34	5.4756	2	4
	0.17	0.0289	2.11	4.4521	2	4
	0.56	0.3136	1.75	3.0625	12	144
	0.22	0.0484	0.5	0.25	20.8	432.64
	0.3	0.09	0.77	0.5929	6.4	40.96
	0.33	0.1089	0.8	0.64	36.5	1332.25
	0.24	0.0576	1.02	1.0404	12.3	151.29
9/21/93	0.56	0.3136	3.6	12.96	13.1	171.61
	0.76	0.5776	2	4	25	625
Mar-94	0.37	0.1369	2.48	6.1504	5	25
	0.33	0.1089	1.76	3.0976	4.98	24.8004
	0.15	0.0225	1.07	1.1449	10.6	112.36
8/5/94	0.1	0.01	2.06	4.2436	17.4	302.76
	0.12	0.0144	0.5	0.25	19.1	364.81
	0.12	0.0144	0.64	0.4096	8.3	68.89
	0.17	0.0289	0.5	0.25	7.7	59.29
	0.12	0.0144	0.81	0.6561	9.4	88.36
	0.13	0.0169	1.03	1.0609	9.5	90.25
	0.13	0.0169	2.08	4.3264	5	25
	0.1	0.01	0.5	0.25	9.6	92.16
	0.11	0.0121	2.16	4.6656	10.9	118.81
	0.13	0.0169	1.25	1.5625	10.4	108.16
	0.11	0.0121	1.12	1.2544	11.1	123.21
	0.14	0.0196	1.16	1.3456	8.9	79.21
	0.14	0.0196	1.95	3.8025	10.6	112.36
	0.16	0.0256	1.71	2.9241	8.1	65.61
	0.16	0.0256	0.97	0.9409	13.9	193.21
9/26/94	Invalidated due to a sampling error. The sampling protocol wasn't followed					
10/24/94	0.023	0.000529	0.27	0.0729	9.2	84.64
10/26/94	0.3	0.09	0.83	0.6889	11	121
	0.22	0.0484	1	1	12	144
	0.31	0.0961	1.6	2.56	19	361
	0.17	0.0289	0.52	0.2704	16	256
11/3/94	0.48	0.2304	1	1	20	400
	0.34	0.1156	0.7	0.49	14	196
	0.36	0.1296	1	1	17	289
	0.33	0.1089	1.3	1.69	13	169
12/21/94	0.5	0.25	6.2	38.44	25	625
	0.49	0.2401	12	144	12	144
	0.43	0.1849	3.8	14.44	18	324
	0.36	0.1296	1.4	1.96	19	361
1/4/95	0.49	0.2401	5.6	31.36	16	256
(duplicate)	0.53	0.2809	17	289	19	361
	5.82	33.8724	5.8	33.64	15	225
1/6/95	0.37	0.1369	4.2	17.64	19	361
	0.56	0.3136	0.65	0.4225	16.4	268.96
	0.5	0.25	1.6	2.56		

SCHN00244488

Date	Cadmium(ppm	Squared Cd	Lead(ppm)	Squared Pb	PCB(ppm)	Squared PCBs
	0.5	0.25	0.86	0.7396		
	0.6	0.36	1.6	2.56		
	0.46	0.2116	0.74	0.5476		
	0.63	0.3969	0.64	0.4096		
	0.74	0.5476	0.92	0.8464		
2/8/95	0.5	0.25	1.3	1.69		
	0.37	0.1369	1.6	2.56		
	0.44	0.1936	2.5	6.25		
	0.52	0.2704	1.2	1.44		
	0.43	0.1849	2.2	4.84		
	0.33	0.1089	2.8	7.84		
	0.38	0.1444	2	4		
	0.33	0.1089	3.7	13.69		
	0.48	0.2304	2.9	8.41		
3/7/95	0.1	0.01	0.1	0.01		
Sum	27.3630	43.3355	135.9700	725.6357	607.1800	9918.6004
Average	0.4275		2.1245		12.6496	
Variance	0.5022		6.9327		47.6176	
Standard Deviation	0.7086		2.6330		6.9005	
T-Value for Conf. Limit	1.9900		1.9900		1.9900	
T-Value for Hypothesis	1.6700		1.6700		1.6700	
Lower Confidence Limit	0.2513		1.4696		10.6675	
Upper Confidence Limit	0.6038		2.7795		14.6316	
Cut-Off Value	1.1479		5.5496		51.6633	
Frequency Distribution	Conc. Range	Frequency	Conc. Rang	Frequency	Conc. Range	Frequency
	0.0	0.0	0.0	0.0	2.0	5.0
	0.2	20.0	1.0	23.0	10.0	12.0
	0.4	19.0	2.0	21.0	20.0	27.0
	0.6	19.0	3.0	10.0	30.0	3.0
	0.8	5.0	4.0	4.0	40.0	1.0
	1.0	0.0	5.0	1.0	50.0	0.0
	>1.0	1.0	>5	5.0	>50	0.0

SCHN00244489

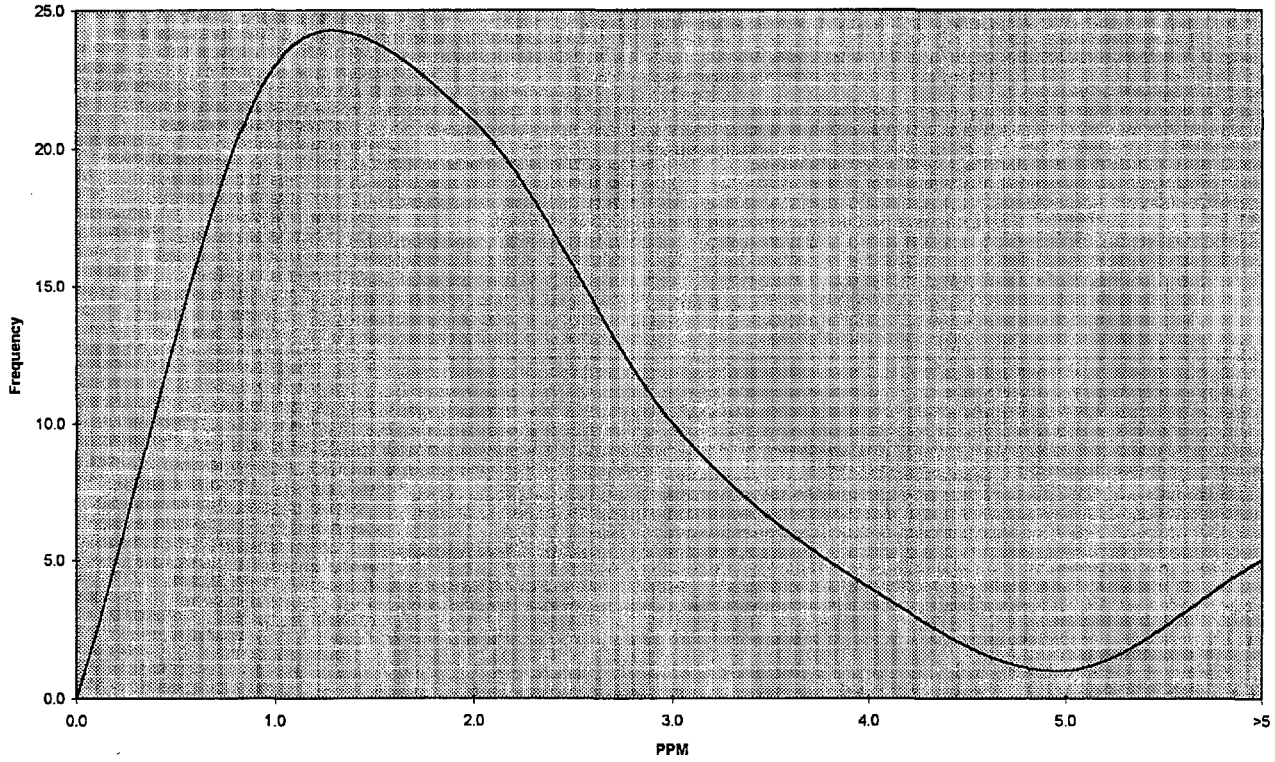
Sheet2 Chart 8



SCHN00244490

Sheet2 Chart 9

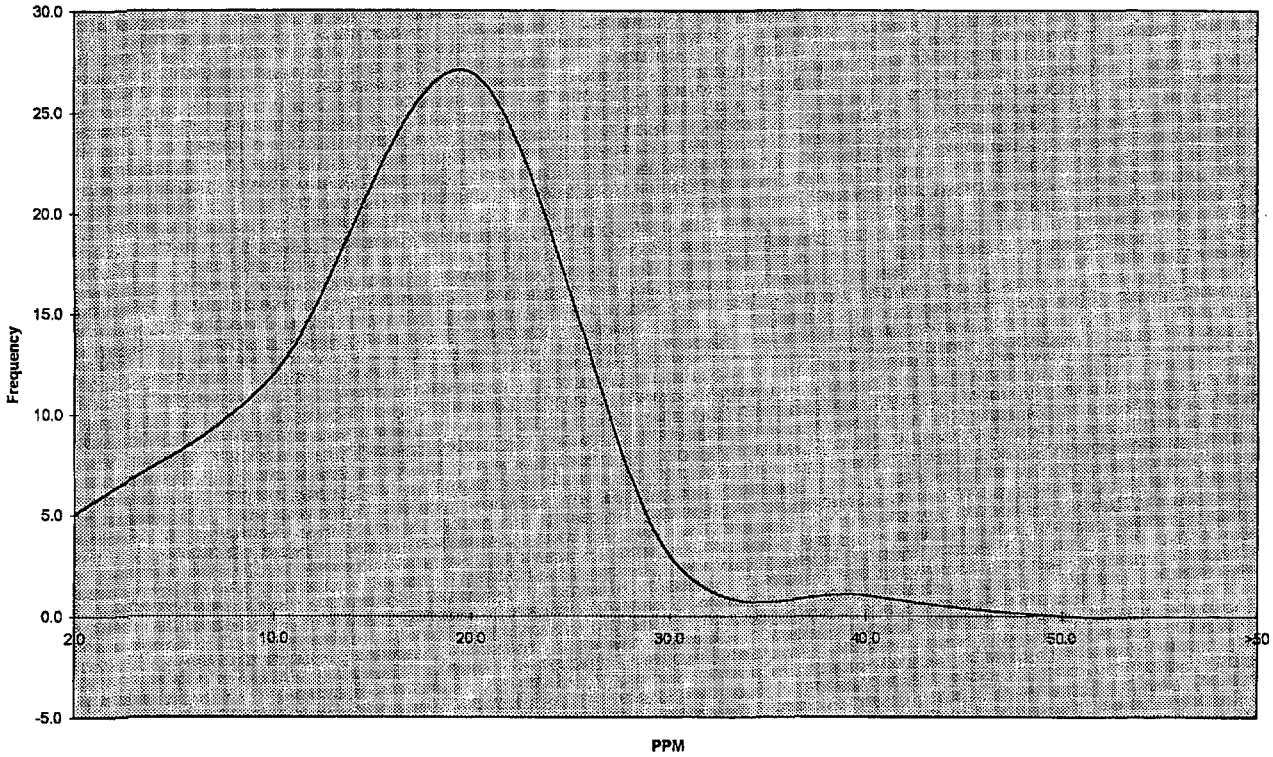
Pb Frequency Distribution



SCHN00244491

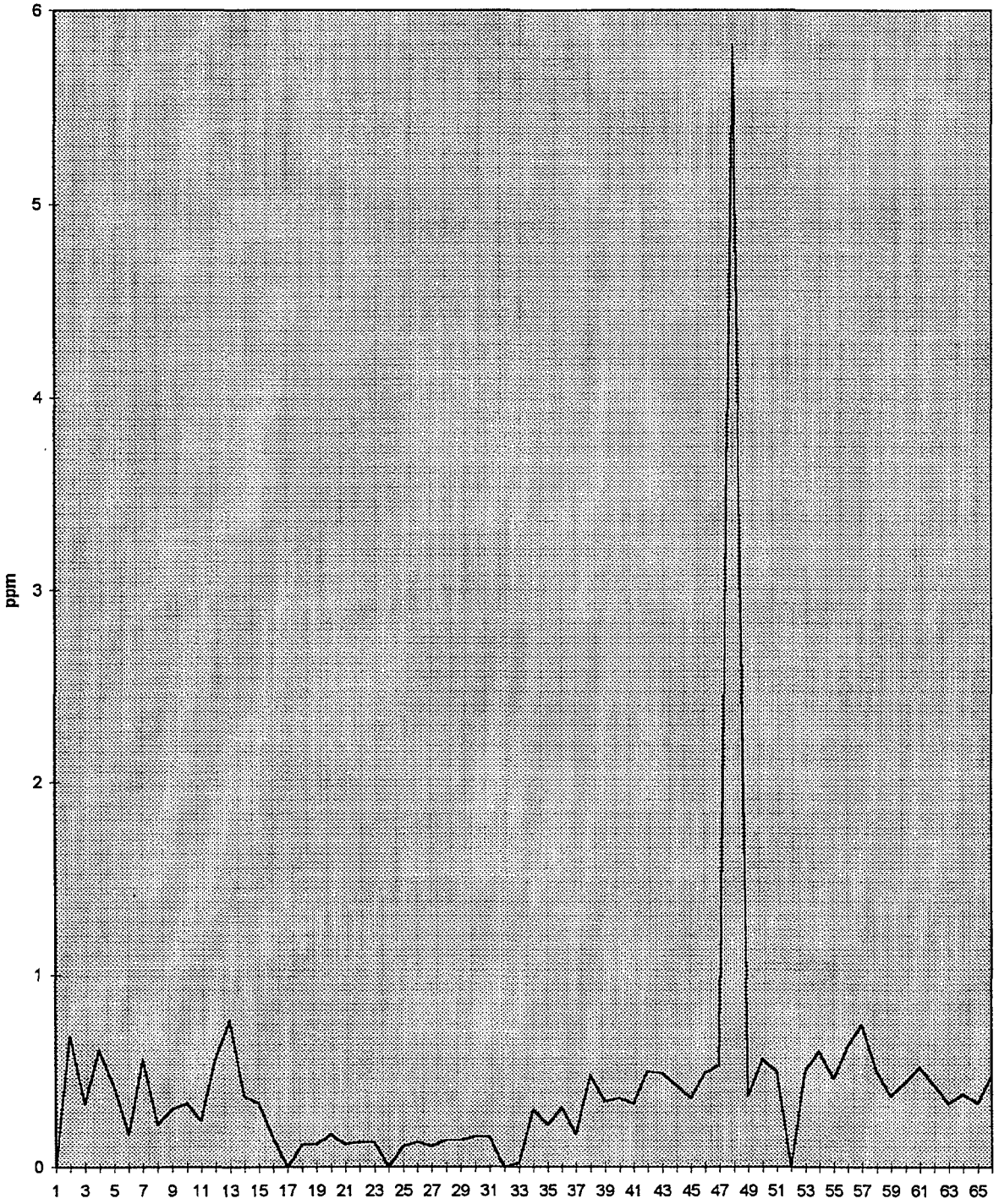
Sheet2 Chart 10

PCB Frequency Distribution



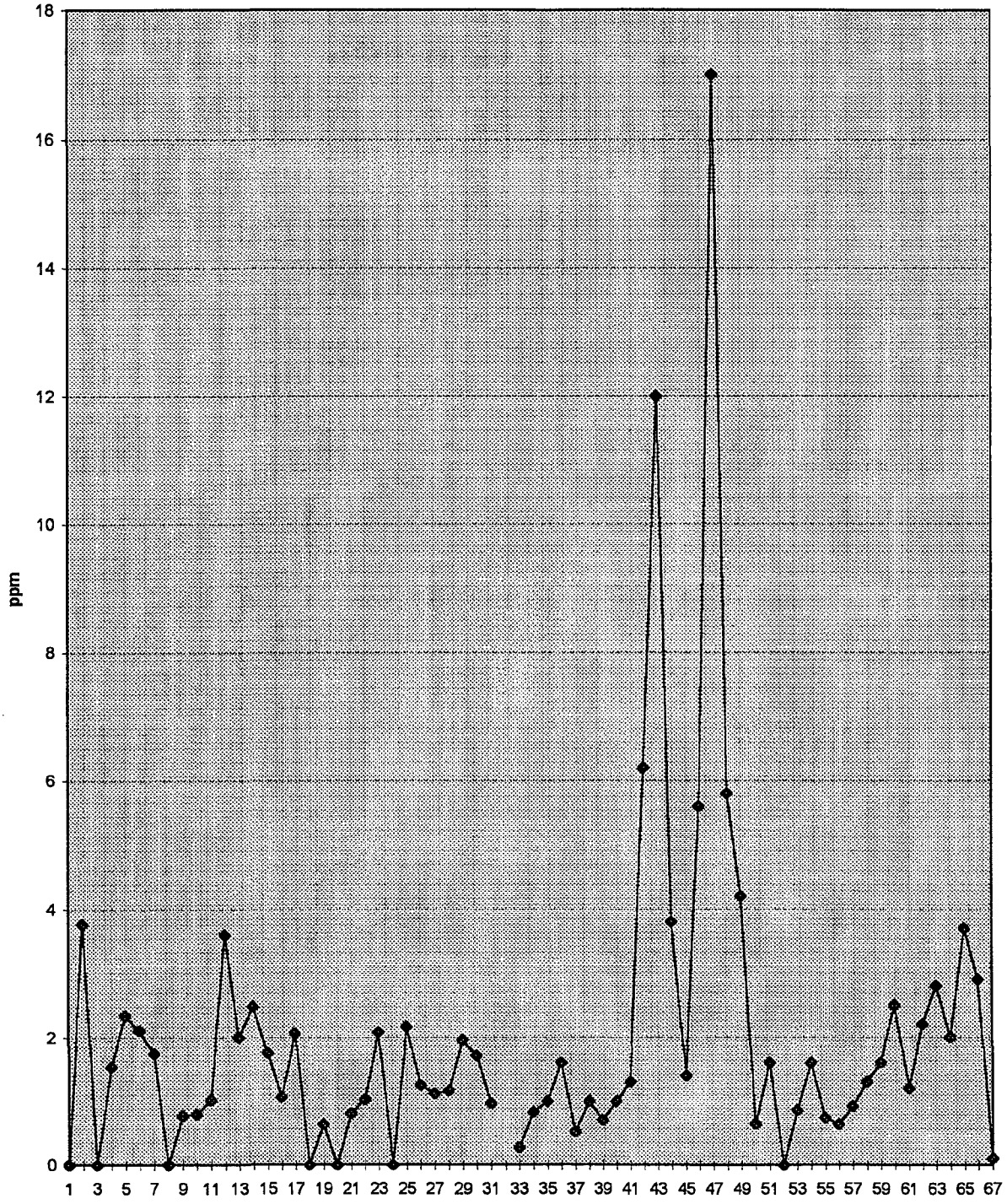
SCHN00244492

CD ANALYSES



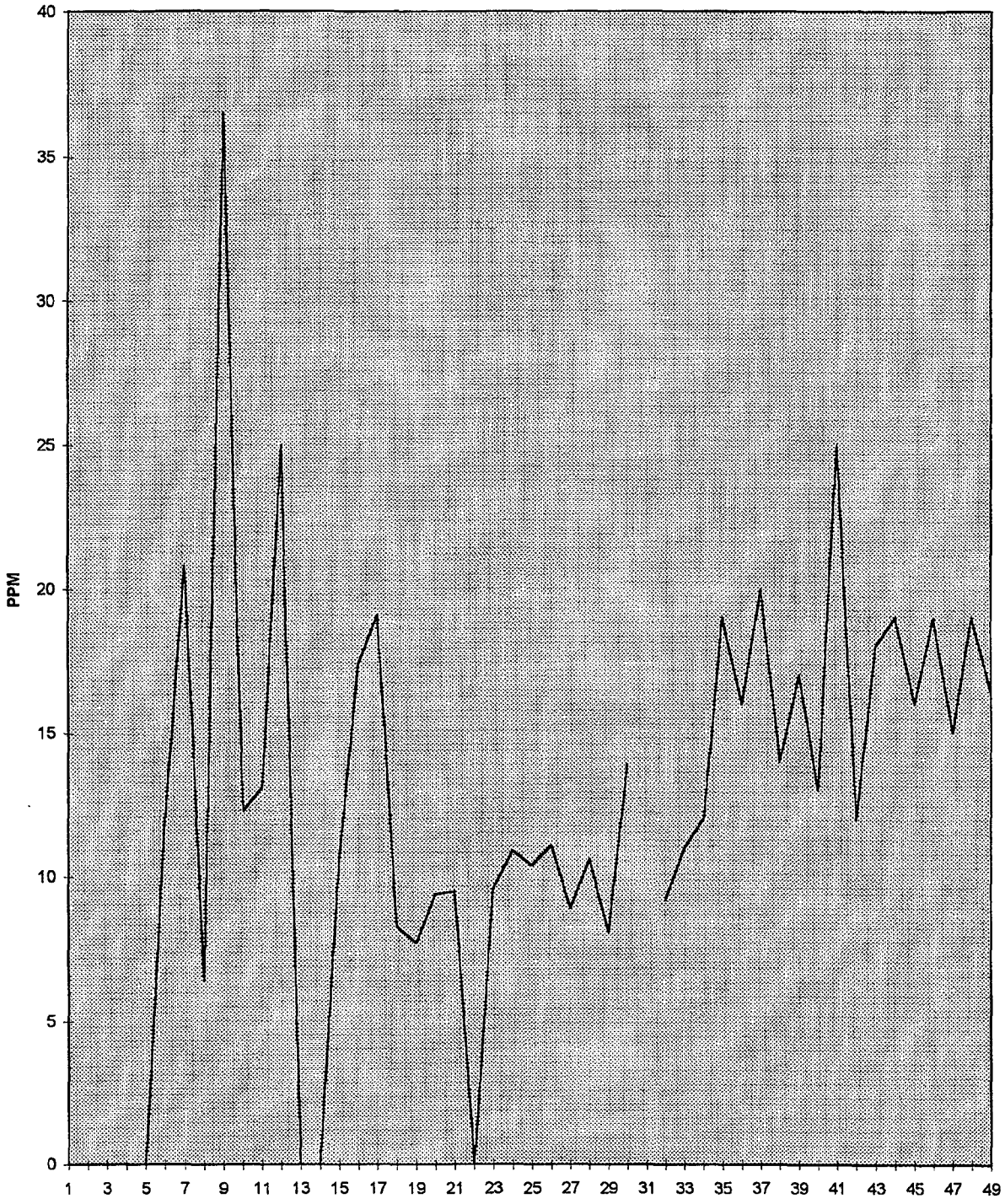
SCHN00244493

Pb ANALYSES



SCHN00244494

PCB ANALYSES



SCHN00244495

Dear Customers:

This memo clarifies our policies for accepting recyclable metals. These requirements reflect our commitment to responsible environmental management. Please be aware that many of our policies are controlled by state and federal environmental regulations which apply both to us and to our customers.

This list is not inclusive; other items not listed may be inappropriate for recycling as scrap metal. Read this carefully and contact Tim Todd in our environmental department at (503) 286-6944 if you have questions about specific items. **Remember that any load can be rejected at your cost if these guidelines are not followed.**

The following materials WILL NOT be accepted at our facility:

- Refrigerants (including CFCs and HCFCs) in refrigerators and air conditioners (Clean Air Act Sections 608 (b)(1) and 608 (c)). Please note that these regulations prohibit any release of refrigerants into the atmosphere, and require persons handling them tofollow specific procedures. In addition, suppliers MUST sign a statement certifying that all refrigerant has been properly removed (40CFR 82).
- Asbestos or asbestos containing materials such as pipe insulation, and surfacing material commonly found on I-beams and other building structures (40 CFR 61.150).
- Oils, gasoline, other petroleum products, and antifreeze. This includes hydraulic fluids, gear oil, and grease. Cars and other equipment must be drained of all fluids and generally free of oil and grease.
- Lead-acid batteries or any battery parts, including automobile batteries (40 CFR 273).
- Items that contain or have contained PCB's, including capacitors in older appliances, light ballasts, and electrical transformers or transformer components (TSCA and 40 CFR 258 and 261).
- Automobile airbags, which contain sodium azide (40 CFR 261).
- Paint cans or other paint containers.
- Fluorescent lights, mercury vapor lights, associated fixtures, or ballasts.
- Any material containing hazardous or toxic substances.
- Military scrap of any kind, unless approved in advance.
- Explosives or explosive materials.
- Tires, wood, yard debris, concrete, asphalt, glass, garbage, rubber or other non-metallic materials.
- Any radioactive materials.

The following items will be accepted ONLY if prepared as described:

- Appliances must have all electrical components removed.
- Engine oil filters must be thoroughly drained AND attached to motor blocks.
- Drums, barrels, and other containers must be thoroughly cleaned and open for inspection. Gas cylinders must be cut in half.
- Compressors must be removed from appliances, drained of all fluids, and cut in half.
- Cable and wire must be cut in 4 foot lengths. Metal banding must be cut in lengths of 1 foot or less. Chain link fencing must be in sections no larger than 18 feet by 4 feet.
- Aerosol cans must be empty, plastic caps removed, and punctured or crushed.

SCRAP ACCEPTANCE

GUIDELINES

SCHNITZER STEEL PRODUCTS CO.
12005 N. Burgard Rd. (97203)
PO Box 10047
Portland, OR 97296-0047
(503)286-5771

SCHN00244499

November 10, 1994

TO: All Vendors and Customers

The purpose of this letter is to remind all of our customers and vendors of those materials we do not accept at our yard.

HAZARDOUS AND TOXIC SUBSTANCES

We will not accept any scrap materials containing any hazardous or toxic substances. "Hazardous and toxic substances" include, but are not limited, to the following:

- Asbestos
- Chlorofluorocarbons (CFC's) from refrigeration or air conditioning systems
- Gases or oils of any kind
- Lead batteries, wet or dry
- PCB's (found in appliance capacitors, light ballasts and transformers)
- Sodium Azide (from airbags)

NOT ACCEPTABLE FOR SHREDDING

We will not accept for shredding any scrap materials containing the following:

- Hazardous or toxic substances, as described above
- Oil filters, unless drained and attached to the motor block
- Washers, dryers or dishwashers containing any electrical components
- Fluorescent light fixtures or ballasts
- Sealed drums or barrels, closed containers or cylinders
- Transformers or transformer components (rectifiers, capacitors)
- Lead batteries or pieces of batteries
- Explosives or explosive materials
- Paint cans or containers
- Tires, wood, garbage, concrete, glass, rubber and other non-metallic substances
- Mufflers or tailpipes, unless attached to car body or kept separate
- Radioactive materials
- Military scrap of any type, unless approved in advance
- Air bags
- Scrap material exceeding any of the following dimensions collectively or individually:
  15 feet long x 7 feet wide x 1/4 inch thick
- Compressors, must be loose, cut in half and all oil and copper removed
- Freon tanks unless cut in half

NONFERROUS SPECIFICATIONS

We will not accept any nonferrous materials containing any hazardous or toxic substances, as described above.

Refrigeration and all other compressors must be loose and cut in half.

CAR BODIES

- The "stuffing" of car bodies is strictly forbidden

WE RESERVE THE RIGHT TO REJECT ANY LOAD FOR ANY REASON. FINAL DECISIONS REST WITH SSP MANAGEMENT.

It is the vendor and customer's responsibility to ensure that any materials offered for sale to us comply with these requirements. We will reject any loads that do not comply with these guidelines.

Sincerely,

Schnitzer Steel Products Co.

Terry L. Glucoft
General Manager

SSI035.LTR

Columbia Analytical Services [illegible]

An Employee-Owned Company

CHAIN OF CU[illegible]TODY

SR#: ______

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

PAGE 1 OF 1 COC # ______

PROJECT NAME: Schnitzer Steel [illegible]

PROJECT NUMBER:

PROJECT MANAGER: Jim Jakubiak

COMPANY/ADDRESS: P.O. Box 10047

Portland, OR 97210

PHONE #: (503) 286 5776 FAX #:

SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 □ 8270 □	Volatile Organics 624 □ 8260 □ 8021 □ BTEX □	Pesticides/Herbicides 608 □ 8081 □ 8141 □ 8151 □	Total Toxic Organics (TTO) 608 □ 624 □ 625 □	PCB AROCLORS 8082	NWTPH-HCID □ NWTPH-D □	NWTPH-G □ Hydrocarbon Scan □	Chlorophenolics □ O&G □	TPH 8015M □ PAHs 8310 □ PCP □	GC/MS SIM PAH □ SIM □	Phenol □ Phthalates □	Metals Total or Dissolved (See list below)	Cyanide □ Hex Chrom □	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle)	TOC 9020 □ AOX 1650 □ 506 □	TCLP - Hg [illegible]				REMARKS
ASR-1	10-6-99	0800		ASR	1					X												X				
ASR-2	10-6-99	0900		ASR	1					X												X				
ASR-3	10-6-99	1400		ASR	1					X												X				
ASR-4	10-6-99	1500		ASR	1					X												X				

REPORT REQUIREMENTS

- X I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- ___ V. EDD

INVOICE INFORMATION

P.O. #

Bill To: Jim Jakubiak (see address above)

TURNAROUND REQUIREMENTS

- ___ 24 hr. ___ 48 hr.
- ___ 5 Day
- X Standard (10-15 working days)
- X Provide FAX Results
- ______ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca (Cd) Co Cr Cu Fe (Pb) Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
[signature] 10/12/99 0900			
Signature Date/Time	Signature Date/Time	Signature Date/Time	Signature Date/Time
Jim Jakubiak [illegible]			
Printed Name Firm	Printed Name Firm	Printed Name Firm	Printed Name Firm

Columbia Analytical Services, Inc. General Terms and Conditions

Laboratory Services

1. These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory ("LAB") and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to LAB. The invalidity or unenforceability, in whole or in part, of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term or condition hereof, or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state from which services are procured.

2. **Warranty.** Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

As LAB sole discretion, preliminary results may be given in advance of the laboratory report. Such preliminary results are tentative, subject to confirmation and final review by LAB. Client's use of preliminary results in any manner shall be at Client's sole risk.

3. **Scope and Compensation.** LAB agrees to perform the services described in the proposal or agreement to which these Terms and Conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1 1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorneys fees if such expense is incurred. The prices, unless stated, do not include any sales, use or other taxes. Such taxes will be added to invoice prices when required. LAB reserves the right to require payment prior to release of data until such time as Client invoices are paid in full. LAB has no obligation, and may decline, to defend, reproduce, return, or supplement data results.

4. **Prices.** Compensation for services performed will be based on the current LAB Analytical Fee Schedule, or on verbal quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. The minimum charge will be $100.00 unless otherwise noted.

5. **Methods.** Where applicable, LAB will use analytical methodologies which are in substantial conformity with U.S. Environmental Protection Agency (EPA), State Agency, American Society for Testing and Materials (ASTM), Association of Official Analytical Chemists (AOAC), Standard Methods for the Examination of Water and Wastewater or other recognized methodologies. LAB reserves the right to deviate from these methodologies if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

6. **Limitations of Liability.** In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense, and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation or responsibility of any kind for losses, costs, expenses or other damages (including but not limited to any special, indirect, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All results should be considered in their entirety, and LAB is not responsible for the separation, detachment or other use of any portion of the results.

7. **Hazard Disclosure.** Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance which is to be delivered to LAB will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

8. **Sample Handling.** Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB's premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost method. Any other shipment arrangements will be at Client's expense.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis, unless modified by applicable state or federal laws. Client will be required to give to LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive, delivery of, refuse to accept, or revoke acceptance of any sample which, in the sole judgment of LAB, (a) is of unsuitable volume, (b) may be or become unsuitable for, or may pose a risk in handling, transport or processing for any health, safety, environmental or other reason, whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client, or (c) has been delivered to the LAB more than 72 hours after sampling or if one-half or more of the recommended holding time for the analysis has lapsed.

9. **Legal Responsibility.** LAB is solely responsible for performance of this contract and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort, including negligence.

10. **Data Deliverables.** Where specifically requested by Client, LAB agrees to produce electronic data representing services performed hereunder, subject to the following specific understanding between the parties: LAB agrees to supply Client with electronic data as mutually defined, using an agreed medium. Client recognizes that LAB is not a software consultant, manufacturer or reseller; any transfer of electronic data pursuant to services provided by LAB is an accommodation to and strictly for the convenience of the Client who is solely liable for the choice and maintenance of the medium utilized. Electronic data provided under this agreement is not deemed to be the project deliverable for the purpose of fulfilling obligations under the Agreement. The provision of electronic data does not in any way modify the intention of the parties that the Client rely on the written or hard copy form of the deliverable.

Except with regard to any limited warranty as specifically set forth below, LAB disclaims and excludes all warranties express or implied with regard to the creation, transmittal or use of electronic data hereunder. The limited warranty in this Agreement replaces all other warranties, express or implied, including any warranties of merchantability or fitness for a particular purpose. Professional warranties extend to written or hard copy deliverables only and do not extend to electronic data supplied to Client. Professional warranties in the Agreement which extend to written or hard copy deliverables shall be undisturbed by this Amendment. LAB's liability for medium failure shall be limited to replacement of the electronic data with a hard copy for a period of thirty days from the date of delivery. LAB's electronic data transfers is derived in part from or is created using third party software, and no such third party warrants or assumes any liability regarding use of or undertakes to provide support information relating to LAB's electronic data. LAB will utilize anti virus programs on a best efforts basis in preparation of the electronic data transfer, but LAB makes no warranty as to the effectiveness of such screening. LAB will also use its best efforts to ensure that its electronic data will meet all criteria as specified by Client, including criteria regarding date/time data, if, and where included, but LAB makes no warranty as to the appropriateness of the client-specified criteria by accepting the same.

In addition to indemnities contained in the underlying agreement between LAB and Client, Client shall hold LAB harmless from any claims, suits or liability arising from or related to electronic data supplied pursuant to this Agreement. Any reuse of original or altered files by Client shall be at Client's risk and without liability or responsibility to LAB, but shall entitle LAB to additional compensation for such unauthorized reuse. In no event will LAB's liability for electronic data include any special, incidental or consequential damages, whether or not LAB has knowledge of the potential for loss or damage.

11. **Force Majeure.** LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such cause and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

BC LABORATORIES, INC.

October 23, 1995

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Dear Tim,

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 09/15/95.

Enclosed please find the analytical data for the testing requested. If you have any questions regarding this report please contact me at (805)327-4911, ext. 204.

Any unused sample will be stored on our premises for 90 days (excluding bacteriologicals) at which time they will be returned or disposed of upon your request.

Please refer to submission number 95-11265 when calling for assistance.

Sincerely,

Jean Maltby

Jean Maltby
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

SCALE ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/28/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Iron	4.66	%

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/28/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1A

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.47	0.1	SW-6010
Lead	4.5	0.1	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/28/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1B

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.54	0.1	SW-6010
Lead	3.8	0.1	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/28/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1C

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.52	0.1	SW-6010
Lead	5.0	0.1	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/29/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1A

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Sample Matrix: Solid waste

Date Collected: 09/11/95
Date Extracted: 09/20/95
Date Analyzed: 09/26/95

Constituents	Analysis Results	Reporting Units	Method Detection Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	6.2	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	2.3	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	8.5	mg/kg	0.6

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Analytical results corrected for the amount of iron material removed during sample splitting.

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/29/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1B

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Sample Matrix: Solid waste

Date Collected: 09/11/95
Date Extracted: 09/20/95
Date Analyzed: 09/26/95

Constituents	Analysis Results	Reporting Units	Method Detection Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	6.9	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	None Detected	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	6.9	mg/kg	0.6

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Analytical results corrected for the amount of iron material removed during sample splitting.

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/29/95
Date Received: 09/15/95
Laboratory No.: 95-11265-1C

Sample Description: SPECIAL FLUFF ANALYSIS: GMF 9-11-95, 09-11-95 FROM 0615 THRU 1415 HRS SAMPLED BY MIKE VAIL

Sample Matrix: Solid waste

Date Collected: 09/11/95
Date Extracted: 09/20/95
Date Analyzed: 09/26/95

Constituents	Analysis Results	Reporting Units	Method Detection Limit
PCB-1016	None Detected	mg/kg	0.1
PCB-1221	None Detected	mg/kg	0.1
PCB-1232	None Detected	mg/kg	0.1
PCB-1242	7.9	mg/kg	0.1
PCB-1248	None Detected	mg/kg	0.1
PCB-1254	None Detected	mg/kg	0.1
PCB-1260	None Detected	mg/kg	0.1
Total PCB's (Summation)	7.9	mg/kg	0.1

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Analytical results corrected for the amount of iron material removed during sample splitting.

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA - DENNIS GRIFFITH

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

95-11265 Janice Rick

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: Special Fluff Analysis.

PRINTED NAME OF SAMPLER(S) Mike Vail.

SIGNATURE OF SAMPLER(S) X

SAMPLE ID NUMBER	DATE	TIME
-1 GMF 9-11-95	9/11/95	06:15, 07:15, 08:15, 09:15, 10:15, 11:15, 13:15, 14:15,

RELINQUISHED BY:	RELINQUISHED BY:
Signature X	Signature
Printed Name Mike Vail.	Printed Name
Company General Metals	Company
Date/Time 9/12/95, 09:30	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature	Signature Jennifer McMahon
Printed Name James McCullough	Printed Name Jennifer McMahon
Company General Metals	Company BC Labs
Date/Time 9/12/95, 13:15	Date/Time 9/15/95, 10:25AM

SPECIAL INSTRUCTIONS/COMMENTS:

SCHN00244601

BC LABORATORIES INC.

SAMPLE RECEIPT FORM - Rev. 4/95

LAB NUMBER 9511265 | TIME RECEIVED: 10:25AM | DATE RECEIVED: 9/15/95 | RECEIVED BY: JM

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☒ Hand Delivery ☐

BC Lab Field Service ☐ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☐ Box ☒

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Temperature _____ Ice ☐ Blue Ice ☐ None ☒ If temperature is not between 2 and 6 C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QT PE UNP																								
PT PE UNP																								
QT INORGANIC METALS																								
PT INORGANIC METALS																								
CN																								
N FORMS																								
SULFIDE																								
NO_2/NO_3																								
TOC																								
TOX																								
COD																								
PHENOL																								
TRIP BLANK																								
VOA VIAL																								
VOA SET																								
OIL & GREASE																								
ODOR																								
RADIOLOGICAL																								
BACT																								
504																								
507																								
508/608/8080																								
515.1/8150																								
525/625/8270																								
547																								
531.1																								
548																								
549																								
QA/QC																								
QT AMBER																								
8 OZ. JAR																								
32 OZ. JAR																								
SOIL SLEEVE																								
Plastic Bag	X																							

Comments: _____

Completed by: JM

(F:\WP60\DATA\DOCS\DIANE\FORMS\SAMREC.FRM)

SCHN00244602

BC LABORATORIES, INC.

FACSIMILE TRANSMISSION COVER SHEET

DATE OF TRANSMISSION: 1-31-96 **FAX NUMBER:** 503-286-6948

ATTENTION: Tim Todd

COMPANY: Schnitzer Steel

FROM: Tracey Liesch
BC LABORATORIES, INC.
FAX NUMBER (805) 327-1918

COMMENTS: 817-1-1C Iron

ANY PROBLEMS WITH TRANSMISSION, PLEASE CALL: (805) 327-4911 EXT. 215

Transmitted by: Tracey Liesch

NUMBER OF PAGES (including cover sheet): 5

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
Percent Iron	2.50	-	-.	-

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1A

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #1) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.50	0.1	SW-6010	1.0
Lead	1.7	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a [illegible]ate basis. Sample analyzed in accordance with EPA's TCLP 18-hour [illegible]traction [illegible].

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Waste [illegible]sical/[illegible]ical Meth[illegible]", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1B

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #2) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.50	0.1	SW-6010	1.0
Lead	1.6	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction report.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1C

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #3) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.54	0.1	SW-6010	1.0
Lead	0.52	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a [illegible] basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction [illegible].

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

96-817

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: Special Fluff Analysis.

PRINTED NAME OF SAMPLER(S) Mike Vail

SIGNATURE OF SAMPLER(S) X M V

SAMPLE ID NUMBER	DATE	TIME
GMF 1-11-96	1/11/96	06:15, 07:15, 08:15, 09:15, 10:15, 11:15, 13:15, 14:15

RELINQUISHED BY:	RELINQUISHED BY:
Signature X M V	Signature
Printed Name Mike Vail	Printed Name
Company General Metals	Company
Date/Time 1-11-95 / 14:30	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature [illegible]	Signature Tina Green
Printed Name James McCullough	Printed Name Tina Green
Company General Metals	Company BC Labs
Date/Time 1-12-95 / 10:00	Date/Time 1-19-96 / 1030

SPECIAL INSTRUCTIONS/COMMENTS:

SCHN00244608

~~45 grams~~
30 grams

SCHN00244609

BC LABORATORIES, INC.

February 06, 1996

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Dear TIM TODD,

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 01/19/96.

Enclosed please find the analytical data for the testing requested. If you have any questions regarding this report please contact me at (805)327-4911, ext. 215.

Any unused sample will be stored on our premises for 90 days (excluding bacteriologicals) at which time they will be returned or disposed of upon your request.

Please refer to submission number 96-00817 when calling for assistance.

Sincerely,

Tracey Liesch

TRACEY LIESCH
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
Percent Iron	2.50	-	-.	-

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

J Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1A

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #1) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.50	0.1	SW-6010	1.0
Lead	1.7	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1B

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #2) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.50	0.1	SW-6010	1.0
Lead	1.6	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/31/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1C

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #3) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sampling Date/Time: 01/11/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.54	0.1	SW-6010	1.0
Lead	0.52	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 02/05/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1A

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #1) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sample Matrix: Solid waste

Date Collected: 01/11/96
Date Extracted: 01/24/96
Date Analyzed: 02/01/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	2.0
PCB-1221	None Detected	mg/kg	2.0
PCB-1232	None Detected	mg/kg	2.0
PCB-1242	None Detected	mg/kg	2.0
PCB-1248	None Detected	mg/kg	2.0
PCB-1254	6.3	mg/kg	2.0
PCB-1260	None Detected	mg/kg	2.0
Total PCB's (Summation)	6.3	mg/kg	2.0

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 02/05/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1B

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #2) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sample Matrix: Solid waste

Date Collected: 01/11/96
Date Extracted: 01/24/96
Date Analyzed: 01/31/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	None Detected	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	3.6	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	3.6	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 02/05/96
Date Received: 01/19/96
Laboratory No.: 96-00817-1C

Sample Description: SPECIAL FLUFF ANALYISI: GMF-1-11-96 (SAMPLE #3) SAMPLED ON 1-11-96 @ 0615 THRU 1415 SAMPLED BY MIKE VAIL

Sample Matrix: Solid waste

Date Collected: 01/11/96
Date Extracted: 01/24/96
Date Analyzed: 01/31/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	2.0
PCB-1221	None Detected	mg/kg	2.0
PCB-1232	None Detected	mg/kg	2.0
PCB-1242	None Detected	mg/kg	2.0
PCB-1248	None Detected	mg/kg	2.0
PCB-1254	8.2	mg/kg	2.0
PCB-1260	None Detected	mg/kg	2.0
Total PCB's (Summation)	8.2	mg/kg	2.0

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES, INC.

May 29, 1996

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 96-05070
Samples Received: 05/02/96

Dear Mr. Todd:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 05/02/96.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 96-05070 when calling for assistance.

Sincerely,

Cheryl Ferguson

Cheryl Ferguson
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

96-5070 ~~Rick~~ Janice

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: Special Fluff Analysis.

PRINTED NAME OF SAMPLER(S) Rick Buse.

SIGNATURE OF SAMPLER(S) X Rick Buse

SAMPLE ID NUMBER	DATE	TIME
GMF 4-30-96	4-30-96	06:15, 07:15, 08:15, 09:15, 10:15, 11:15, 13:15, 14:15.

RELINQUISHED BY:	RELINQUISHED BY:
Signature X Rick Buse	Signature
Printed Name Rick Buse.	Printed Name
Company General Metals.	Company
Date/Time 4/30/96 , 14:30	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature Jennifer McMahon	Signature
Printed Name J. McMahon	Printed Name
Company BC Labs	Company
Date/Time 5/2/96 , 10Am	Date/Time /

SPECIAL INSTRUCTIONS/COMMENTS:

SCHN00244620

BC LABORATORIES INC.

SAMPLE RECEIPT FORM - Rev. No. 2-11/95

LAB NUMBER: 965070 | TIME RECEIVED: 10AM | DATE RECEIVED: 5/2/96 | RECEIVED BY: JM

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☒ Hand Delivery ☐

BC Lab Field Service ☐ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☐ Box ☒

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Temperature _____ °C Ice ☐ Blue Ice ☐ None ☒ If temperature is not between 2 and 6 °C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QT PE UNP																								
PT PE UNP																								
QT INORGANIC METALS																								
PT INORGANIC METALS																								
CN																								
N FORMS																								
SULFIDE																								
NO_3/NO_2																								
TOC																								
COD																								
PHENOL																								
TRIP BLANK																								
VOA VIAL																								
VOA SET																								
OIL & GREASE																								
ODOR																								
RADIOLOGICAL																								
BACT																								
504																								
507																								
508/608/8080																								
515.1/8150																								
525/625/8270																								
547																								
531.1																								
548																								
549																								
QA/QC																								
QT AMBER																								
8 OZ. JAR																								
32 OZ. JAR																								
SLEEVE																								
PLASTIC BAG	X																							

Comments: _____

Completed by: JM

IF:\WP60\DATA\DOCS\SHELLAH\FORMS\SAMREC.FRM

SCHN00244621

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/17/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1

Sample Description: SPECIAL FLUFF ANALYSIS: GMF SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sampling Date/Time: 04/30/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
Iron Material	4.33	%	-.	-

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/17/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1A

Sample Description: SPECIAL FLUFF ANALYSIS: GMF (SAMPLE #1) SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sampling Date/Time: 04/30/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.46	0.1	SW-6010	1.0
Lead	None Detected	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/17/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1B

Sample Description: SPECIAL FLUFF ANALYSIS: GMF (SAMPLE #2) SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sampling Date/Time: 04/30/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.58	0.1	SW-6010	1.0
Lead	0.81	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/17/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1C

Sample Description: SPECIAL FLUFF ANALYSIS: GMF (SAMPLE #3) SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sampling Date/Time: 04/30/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.47	0.1	SW-6010	1.0
Lead	None Detected	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/22/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1A

Sample Description: SPECIAL FLUFF ANALYSIS: GMF (SAMPLE #1) SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sample Matrix: Solid waste

Date Collected: 04/30/96
Date Extracted: 05/06/96
Date Analyzed: 05/20/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	5.8	mg/kg	0.7
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	1.7	mg/kg	0.3
PCB-1260	None Detected	mg/kg	0.3
Total PCB's (Summation)	7.5	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/22/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1B

Sample Description: SPECIAL FLUFF ANALYSIS: GMF (SAMPLE #2) SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sample Matrix: Solid waste

Date Collected: 04/30/96
Date Extracted: 05/06/96
Date Analyzed: 05/20/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	6.6	mg/kg	0.7
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	1.9	mg/kg	0.3
PCB-1260	None Detected	mg/kg	0.3
Total PCB's (Summation)	8.5	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 05/22/96
Date Received: 05/02/96
Laboratory No.: 96-05070-1C

Sample Description: SPECIAL FLUFF ANALYSIS: GMF (SAMPLE #3) SAMPLED ON 4-30-96 @ 0615 THRU 1415 SAMPLED BY RICK BUSE

Sample Matrix: Solid waste

Date Collected: 04/30/96
Date Extracted: 05/06/96
Date Analyzed: 05/20/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	7.3	mg/kg	0.7
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	2.1	mg/kg	0.3
PCB-1260	None Detected	mg/kg	0.3
Total PCB's (Summation)	9.4	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/U.U.U.36-0144 FAX 503/323-2793

May 1, 1996

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

Copies of laboratory reports for the most recent automobile shredder residue sampling events are attached, as you requested. We are currently sampling this material bi-annually.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachment

BC LABORATORIES, INC.

August 14, 1996

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 96-08682
Samples Received: 07/26/96

Dear Mr. Todd:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 07/26/96.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - RICK BUSE. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 96-08682 when calling for assistance.

Sincerely,

Cheryl Ferguson

Cheryl Ferguson
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

96-8682

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

DISTRIBUTION

PROJECT: Special FLUFF Analysis

PRINTED NAME OF SAMPLER(S) Jeff Schaffrath

SIGNATURE OF SAMPLER(S) Jeff Schaffrath

SAMPLE ID NUMBER	DATE	TIME			
GMF 7-19-96	7-19-96	6:20	7:20	8:20	9:20
		10:20	11:20	12:20	1:20

RELINQUISHED BY:	RELINQUISHED BY:
Signature Jeff Schaffrath	Signature
Printed Name Jeff Schaffrath	Printed Name
Company General Metals of Tacoma	Company
Date/Time 7-19-96 / 2:00 PM	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature Richard Buse	Signature Jennifer McMahon
Printed Name Richard Buse	Printed Name J. McMahon
Company General Metals of Tacoma	Company BC Labs
Date/Time 7-22-96 / 7:30 AM	Date/Time 7/26/96 / 10AM

SPECIAL INSTRUCTIONS/COMMENTS:

NUMBERING CHECKED BY L.S.

SCHN00244631

BC LABORATORIES INC.

SAMPLE RECEIPT FORM - Rev. No. 2-11/95

LAB NUMBER: 96-8682 | TIME RECEIVED: 10AM | DATE RECEIVED: 7/26/96 | RECEIVED BY: JM

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☒ Hand Delivery ☐

BC Lab Field Service ☐ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☐ Box ☒

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Temperature _____ °C Ice ☐ Blue Ice ☐ None ☒ If temperature is not between 2 and 6 °C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QT PE UNP																								
PT PE UNP																								
QT INORGANIC METALS																								
PT INORGANIC METALS																								
CN																								
N FORMS																								
SULFIDE																								
NO_2/NO_3																								
TOC																								
T[illegible]																								
COD																								
PHENOL																								
TRIP BLANK																								
~~VOA VIAL~~																								
VOA SET																								
OIL & GREASE																								
CDOR																								
RADIOLOGICAL																								
BACT																								
504																								
507																								
508/608/8080																								
515.1/8150																								
525/625/8270																								
547																								
531.1																								
548																								
549																								
QA/QC																								
QT AMBER																								
8 OZ. JAR																								
32 OZ. JAR																								
(SLEEVE																								
Plastic Bag X																								

Comments: _____

Completed by: JM

F:\WP60\DATA\DOCS\SHEILAH\FORMS\SAMREC.FR

SCHN00244632

BC LABORATORIES

SCALE ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1

Sample Description: GMF SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Iron	9.01	%

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/07/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 07/19/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.58	0.1	SW-6010	1.0
Lead	6.4	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/07/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 07/19/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.56	0.1	SW-6010	1.0
Lead	1.8	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/07/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 07/19/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.52	0.1	SW-6010	1.0
Lead	4.8	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/05/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	2.9	mg/kg	0.3
Total PCB's (Summation)	2.9	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	114.	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/06/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	1.9	mg/kg	0.3
Total PCB's (Summation)	1.9	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	148.	60-140

Note: Surrogate is high due to matrix interferences.
PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/06/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	3.0	mg/kg	0.3
Total PCB's (Summation)	3.0	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	110.	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES, INC.

FACSIMILE TRANSMISSION COVER SHEET

DATE OF TRANSMISSION: 8 -14 -96 FAX NUMBER: 503/286-6940

ATTENTION: Tim Todd

COMPANY: Schnitzer Steel

FROM: Cheryl Ferguson
BC LABORATORIES, INC.
FAX NUMBER (805) 327-1918

COMMENTS: 96-08682 -1
-1A, -1B, -1C - 8080's

NOTE: THE TELECOPY TRANSMISSION UNDER THIS COVER IS INTENDED FOR THE USE OF THE DESIGNATED RECIPIENT(S) ONLY.

IF PROBLEMS WITH TRANSMISSION, PLEASE CALL: (805) 327-4911 EXT. 206

Transmitted by: Erin

BC LABORATORIES

SCALE ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1

Sample Description: GMF SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Iron	9.01	%

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MARK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/05/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	2.9	mg/kg	0.3
Total PCB's (Summation)	2.9	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	114.	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10647
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/06/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	1.9	mg/kg	0.3
Total PCB's (Summation)	1.9	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	148.	60-140

Note: Surrogate is high due to matrix interference.
PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/06/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	3.0	mg/kg	0.3
Total PCB's (Summation)	3.0	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	110.	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.36-0144 FAX 503/323-2793

June 3, 1996

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

A copy of the laboratory report for the most recent automobile shredder residue sampling event is attached. Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd
Environmental Administrator

SCHNITZER STEEL PRODUCTS CO.

3200 N.W. Yeon Ave. P.O. Box 10047 Portland, Oregon 97210
Phone 503/224-9900 Telex/W.U.U.36-0144 FAX 503/323-2793

June 3, 1996

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

A copy of the laboratory report for the most recent automobile shredder residue sampling event is attached. Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1A

Sample Description: GMF 8-28-96 (SAMPLE #1) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.45	0.1	SW-6010	1.0
Lead	0.66	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1B

Sample Description: GMF 8-28-96 (SAMPLE #2) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.54	0.1	SW-6010	1.0
Lead	2.9	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

CC: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
CC: GENERAL METALS OF TACOMA, INC - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1C

Sample Description: GMF 8-28-96 (SAMPLE #3) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.60	0.1	SW-6010	1.0
Lead	2.0	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

CC: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
CC: GENERAL METALS OF TACOMA, INC - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES, INC.

FACSIMILE TRANSMISSION COVER SHEET

DATE OF TRANSMISSION: 9 - 19 -96 FAX NUMBER: 503/286-6948

ATTENTION: Tim Todd

COMPANY: Schnitzer Steel Ind.

FROM: Cheryl Ferguson
BC LABORATORIES, INC
FAX NUMBER (805) 327-1918

COMMENTS: 96-10402-1A,-1B,-1C- TCLP Toxicity

NOTE: THE TELECOPY TRANSMISSION UNDER THIS COVER IS INTENDED FOR THE USE OF THE DESIGNATED RECIPIENT(S) ONLY.

ANY PROBLEMS WITH TRANSMISSION, PLEASE CALL: (805) 327-4911 EXT. 206

Transmitted by: Erin

BC LABORATORIES, INC.

FACSIMILE TRANSMISSION COVER SHEET

DATE OF TRANSMISSION: 9 - 25 -96 FAX NUMBER: 503/ 286-6948

ATTENTION: Tim Todd

COMPANY: Schnitzer Steel Industries

FROM: Cheryl Ferguson
BC LABORATORIES, INC.
FAX NUMBER (805) 327-1918

COMMENTS: 96-10402-1 - 96 Iron

NOTE: THE TELECOPY TRANSMISSION UNDER THIS COVER IS INTENDED FOR THE USE OF THE DESIGNATED RECIPIENT(S) ONLY.

NY PROBLEMS WITH TRANSMISSION, PLEASE CALL: (805) 327-4911 EXT. 206

Transmitted by: aim

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1

Sample Description: GMF 8-28-96 SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
% Iron	7.89	-	-.	-

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE WALL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC. - RICK REES

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES, INC.

FACSIMILE TRANSMISSION COVER SHEET

DATE OF TRANSMISSION: 9 - 30-96 FAX NUMBER: 503/286-6948

ATTENTION: Jim Todd

COMPANY: Schnitzer Steel Industries

FROM: Cheryl Ferguson
BC LABORATORIES, INC.
FAX NUMBER (805) 327-1918

COMMENTS: 96-10402-1A,-1B,-1C-80805

NOTE: THE TELECOPY TRANSMISSION UNDER THIS COVER IS INTENDED FOR THE USE OF THE DESIGNATED RECIPIENT(S) ONLY.

ANY PROBLEMS WITH TRANSMISSION, PLEASE CALL: (805) 327-4911 EXT. 206

Transmitted by: Erin

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1C

Sample Description: GMF 8-28-96 (SAMPLE #3) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	4.3	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	2.9	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	7.2	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1B

Sample Description: GMF 8-28-96 (SAMPLE #2) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	4.5	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	3.2	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	7.7	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1A

Sample Description: GMF 8-28-96 (SAMPLE #1) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	2.2	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	2.5	mg/kg	0.3
PCB-1260	None Detected	mg/kg	0.3
Total PCB's (Summation)	4.7	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES, INC.

October 01, 1996

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 96-10402
Samples Received: 09/06/96

Dear MR. TODD,

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 09/06/96.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER; GENERAL METALS OF TACOMA, INC - RICE BUSE. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 96-10402 when calling for assistance.

Sincerely,

Cheryl Ferguson

CHERYL FERGUSON
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

[redacted]

96-10402

DISTRIBUTION: Jo L. | P.P. | S.B.

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: Special FluFF Analysis

PRINTED NAME OF SAMPLER(S) Jeff Schaffrath

SIGNATURE OF SAMPLER(S) x Jeff Schaffrath

SAMPLE ID NUMBER	DATE	TIME
GMF 8-28-96	8-28-96	6:25 7:20 8:20 9:25 10:25 11:25 12:25 1:25

RELINQUISHED BY:	RELINQUISHED BY:
Signature x Jeff Schaffrath	Signature
Printed Name Jeff Schaffrath	Printed Name
Company General Metals of Tacoma	Company
Date/Time 8-29-96 / 8:25	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature Richard Buse	Signature Jennifer McMahon
Printed Name Richard Buse	Printed Name J. McMahon
Company General Metals of Tacoma	Company BC Labs
Date/Time 8-29-96 / 8:20	Date/Time 9/6/96, 10:30AM

SPECIAL INSTRUCTIONS/COMMENTS: Please Send me one copy please
Rick Buse

NUMBERING CHECKED BY

BB C 05794
FILE 7920-13

SCHN00244663

BC LABORATORIES INC.

SAMPLE RECEIPT FORM - Rev. No. 2-11/95

LAB NUMBER: 96-10402 | TIME RECEIVED: 10:30AM | DATE RECEIVED: 9/6/96 | RECEIVED BY: JM

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☒ Hand Delivery ☐

BC Lab Field Service ☐ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☐ Box ☒

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Temperature _____ °C Ice ☐ Blue Ice ☐ None ☒ If temperature is not between 2 and 6 °C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QT PE UNP																								
PT PE UNP																								
QT INORGANIC METALS																								
PT INORGANIC METALS																								
CN																								
N FORMS																								
SULFIDE																								
NO_2/NO_3																								
TC																								
TOX																								
COD																								
PHENOL																								
TRIP BLANK																								
VOA VIAL																								
VOA SET																								
OIL & GREASE																								
ODOR																								
RADIOLOGICAL																								
BACT																								
504																								
507																								
508/608/8080																								
515.1/8150																								
525/625/8270																								
547																								
531.1																								
548																								
549																								
QA/QC																								
QT AMBER																								
8 OZ. JAR																								
3 [illegible] JAR																								
SOIL SLEEVE																								
PLASTIC BAG	X																							

Comments: _____

Completed by: JM

IF:\WP60\DATA\DOCS\SHBLAH\FORMS\SAMREC.FRM

SCHN00244664

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1

Sample Description: GMF 8-28-96 SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
% Iron	7.89	-	-.	-

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

Dan Schultz
Laboratory Director

: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1A

Sample Description: GMF 8-28-96 (SAMPLE #1) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.45	0.1	SW-6010	1.0
Lead	0.66	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1B

Sample Description: GMF 8-28-96 (SAMPLE #2) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.54	0.1	SW-6010	1.0
Lead	2.9	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1C

Sample Description: GMF 8-28-96 (SAMPLE #3) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.60	0.1	SW-6010	1.0
Lead	2.0	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1A

Sample Description: GMF 8-28-96 (SAMPLE #1) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	2.2	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	2.5	mg/kg	0.3
PCB-1260	None Detected	mg/kg	0.3
Total PCB's (Summation)	4.7	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1B

Sample Description: GMF 8-28-96 (SAMPLE #2) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	4.5	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	3.2	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	7.7	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1C

Sample Description: GMF 8-28-96 (SAMPLE #3) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	4.3	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	2.9	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	7.2	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

September 18, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

ATTN: Tim Todd

Dear Mr. Todd,

As per our phone conversation today, we will no longer be removing the "iron" or magnetic material from the samples of auto shredder waste that you submit to us for analysis. In the past we have removed this material and then corrected the results for the amount of this material removed to give you results that reflected the sample as we had received it. As we discussed, we will continue to measure the "iron" content as we have in the past but will then put the "iron" back into the sample prior to splitting it into 3 portions and analyzing for the PCB's and TCLP metals. In this way you will continue to receive results on an "as received" basis as well as the "iron" content for your own quality control purposes, but there will not be the calculated corrections of results.

The samples that are currently in house are being analyzed and reported as we have in the past since they were already in process when we spoke on the phone. Again, I appreciate your time and cooperation with these changes and if you have any questions, please feel free to call me.

Sincerely,

Richard L. Penner
Metals Dept. Supervisor

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

ENERAL METALS OF TACOMA
UM Y OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm) #1	PCB (ppm) #2	PCB (ppm) #3	PCB (ppm) AVE	CADMIUM TCLP (ppm) #1	CADMIUM TCLP (ppm) #2	CADMIUM TCLP (ppm) #3	CADMIUM TCLP (ppm) AVE	LEAD TCLP (ppm) (5 ppm max.) #1	LEAD TCLP (ppm) (5 ppm max.) #2	LEAD TCLP (ppm) (5 ppm max.) #3	LEAD TCLP (ppm) (5 ppm max.) AVE
4 JUL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
4 SEP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.16	0.16
4 OCT 91	13.0	8.5	9.4	10.3								
1 JAN 92	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
2 APR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
0 JUL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
1 OCT 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
5 FEB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
7 APR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2
7 MAY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
2 JUN 93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
7 JUN 93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
7 JUL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
7 OCT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
3 FE 4	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
9 APR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
7 JUL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
7 SEP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
3 SEP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
5 SEP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
5 JAN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
1 SEP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
9 JAN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
0 MAY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
9 JUL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
8 AUG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85

tatistical Analysis:

	PCB	Cadmium	Lead
Sum	2738.6	39.5	243.48
Average	19.15	0.4759	2.9335
Median	12.10	0.3900	1.7000
Variance	226.37	0.0541	9.5929
Star d Dev.	15.05	0.2327	3.0972
-Value for Conf.	1.98	1.9900	1.9900
-Value for Hyp.	1.65	1.6700	1.6700
LCL	16.66	0.4251	2.2570
UCL	21.64	0.5585	4.0064
Cut-Off Value	52.08	1.0427	5.5677

ENERAL METALS OF TACOMA
UMMARY OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm) #1	PCB (ppm) #2	PCB (ppm) #3	PCB (ppm) AVE	CADMIUM TCLP (ppm) #1	CADMIUM TCLP (ppm) #2	CADMIUM TCLP (ppm) #3	CADMIUM TCLP (ppm) AVE	LEAD TCLP (ppm) (5 ppm max.) #1	LEAD TCLP (ppm) (5 ppm max.) #2	LEAD TCLP (ppm) (5 ppm max.) #3	LEAD TCLP (ppm) (5 ppm max.) AVE
1 JUL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
SEP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.15	0.16
1 OCT 91	13.0	8.5	9.4	10.3								
1 JAN 92	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
2 APR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
1 JUL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
1 OCT 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
3 FEB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
7 APR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2
7 MAY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
2 JUN 93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
7 JUN 93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
7 JUL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
7 OCT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
3 FE[illegible]	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
3 APR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
7 JUL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
7 SEP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
3 SEP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
5 SEP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
5 JAN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
1 SEP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
1 JAN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
1 MAY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
1 JUL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
3 AUG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85

atistical Analysis:

	PCB	Cadmium	Lead
Sum	2738.6	39.5	243.48
Average	19.15	0.4759	2.9335
Median	12.10	0.3900	1.7000
Variance	226.37	0.0541	9.5929
Stan[illegible] Dev.	15.05	0.2327	3.0972
Value for Conf.	1.98	1.9900	1.9900
-Value for Hyp.	1.65	1.6700	1.6700
LCL	16.66	0.4251	2.2570
UCL	21.64	0.5565	4.0064
Cut-Off Value	52.08	1.0427	5.5677

ENERAL METALS OF TACOMA
UM Y OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm) #1	PCB (ppm) #2	PCB (ppm) #3	PCB (ppm) AVE	CADMIUM TCLP (ppm) #1	CADMIUM TCLP (ppm) #2	CADMIUM TCLP (ppm) #3	CADMIUM TCLP (ppm) AVE	LEAD TCLP (ppm) (5 ppm max.) #1	LEAD TCLP (ppm) #2	LEAD TCLP (ppm) #3	LEAD TCLP (ppm) AVE
4 JUL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
SEP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.15	0.16
4 OCT 91	13.0	8.5	9.4	10.3								
1 JAN 92	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
2 APR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
0 JUL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
1 OCT 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
5 FEB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
7 APR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2
7 MAY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
2 JUN 93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
7 JUN 93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
7 JUL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
7 OCT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
3 FE 4	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
9 APR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
7 JUL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
7 SEP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
3 SEP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
5 SEP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
5 JAN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
1 SEP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
9 JAN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
0 MAY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
9 JUL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
8 AUG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85

tatistical Analysis:

	PCB	Cadmium	Lead
Sum	2738.6	39.5	243.48
Average	19.15	0.4759	2.9335
Median	12.10	0.3900	1.7000
Variance	226.37	0.0541	9.5929
Star d Dev.	15.05	0.2327	3.0972
alue or Conf.	1.98	1.9900	1.9900
-Value for Hyp.	1.65	1.6700	1.6700
LCL	16.66	0.4251	2.2570
UCL	21.64	0.5565	4.0064
Cut-Off Value	52.08	1.0427	5.5677

GENERAL METALS OF TACOMA
SUMMARY OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm) #1	PCB (ppm) #2	PCB (ppm) #3	PCB (ppm) AVE	CADMIUM TCLP (ppm) #1	CADMIUM TCLP (ppm) #2	CADMIUM TCLP (ppm) #3	CADMIUM TCLP (ppm) AVE	LEAD TCLP (ppm) (5 ppm max.) #1	LEAD TCLP (ppm) (5 ppm max.) #2	LEAD TCLP (ppm) (5 ppm max.) #3	LEAD TCLP (ppm) (5 ppm max.) AVE
4 JUL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
4 SEP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.16	0.16
4 OCT 91	13.0	8.5	9.4	10.3								
1 JAN 92	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
2 APR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
0 JUL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
1 OCT 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
5 FEB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
7 APR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2
7 MAY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
2 JUN 93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
7 JUN 93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
7 JUL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
7 OCT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
3 FEB 94	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
9 APR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
7 JUL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
7 SEP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
3 SEP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
5 SEP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
5 JAN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
1 SEP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
9 JAN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
0 MAY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
9 JUL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
8 AUG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85

Statistical Analysis:

	PCB	Cadmium	Lead
Sum	2738.6	39.5	243.48
Average	19.15	0.4759	2.9335
Median	12.10	0.3900	1.7000
Variance	226.37	0.0541	9.5929
Standard Dev.	15.05	0.2327	3.0972
t-Value for Conf.	1.98	1.9900	1.9900
t-Value for Hyp.	1.65	1.6700	1.6700
LCL	16.66	0.4251	2.2570
UCL	21.64	0.5565	4.0064
Cut-Off Value	52.08	1.0427	5.5677

GENERAL METALS OF TACOMA
SUMMARY OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm) #1	PCB (ppm) #2	PCB (ppm) #3	PCB (ppm) AVE	CADMIUM TCLP (ppm) #1	CADMIUM TCLP (ppm) #2	CADMIUM TCLP (ppm) #3	CADMIUM TCLP (ppm) AVE	LEAD TCLP (ppm) (5 ppm max.) #1	LEAD TCLP (ppm) (5 ppm max.) #2	LEAD TCLP (ppm) (5 ppm max.) #3	LEAD TCLP (ppm) (5 ppm max.) AVE
24 JUL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
4 SEP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.15	0.16
14 OCT 91	13.0	8.5	9.4	10.3								
21 JAN 92	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
22 APR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
30 JUL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
21 OCT 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
15 FEB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
27 APR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2
27 MAY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
02 JUN 93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
07 JUN 93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
27 JUL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
27 OCT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
23 [illegible] 94	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
29 APR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
27 JUL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
07 SEP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
13 SEP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
15 SEP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
25 JAN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
11 SEP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
19 JAN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
30 MAY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
19 JUL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
28 AUG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85

Statistical Analysis:

	PCB	Cadmium	Lead
Sum	2738.6	39.5	243.48
Average	19.15	0.4759	2.9335
Median	12.10	0.3900	1.7000
Variance	226.37	0.0541	9.5929
Standard Dev.	15.05	0.2327	3.0972
T-V[illegible] for Conf.	1.98	1.9900	1.9900
T-Value for Hyp.	1.65	1.6700	1.6700
LCL	16.66	0.4251	2.2570
UCL	21.64	0.5565	4.0064
Cut-Off Value	52.08	1.0427	5.5677

SCHNITZER STEEL PRODUCTS CO.

) N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

October 8, 1996

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

Copies of the laboratory reports for the most recent automobile shredder residue sampling events are attached, along with tabulated historical sampling data. Historical data includes a statistical evaluation conducted by methods prescribed in the August 1993 U.S. Environmental Protection Agency field manual entitled Sampling Guidance for Scrap Metal Shredders.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments

BC LABORATORIES, INC.

August 14, 1996

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 96-08682
Samples Received: 07/26/96

Dear Mr. Todd:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 07/26/96.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - RICK BUSE. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 96-08682 when calling for assistance.

Sincerely,

Cheryl Ferguson

Cheryl Ferguson
Client Services
BC Laboratories, Inc.

96-8682

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

DISTRIBUTION

PROJECT: Special FLUFF Analysis

PRINTED NAME OF SAMPLER(S) Jeff Schaffrath

SIGNATURE OF SAMPLER(S) Jeff Schaffrath

SAMPLE ID NUMBER	DATE	TIME			
GMF 7-19-96	7-19-96	6:20	7:20	8:20	9:20
		10:20	11:20	12:20	1:20

RELINQUISHED BY:	RELINQUISHED BY:
Signature JEFF SCHAFFRATH	Signature
Printed Name Jeff Schaffrath	Printed Name
Company General Metals OF Tacoma	Company
Date/Time 7-19-96 / 2:00PM	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature Richard Buse	Signature jennifer mcmahon
Printed Name Richard Buse	Printed Name J. McMahon
Company General Metals OF Tacoma	Company BC labs
Date/Time 7-22-96 / 7:30 AM.	Date/Time 7/26/96 / 10AM

SPECIAL INSTRUCTIONS/COMMENTS:

NUMBERING CHECKED BY L.S.

SCHN00244680

3C LABORATORIES INC.

SAMPLE RECEIPT FORM - Rev. No. 2-11/95

LAB NUMBER: 96-8682	TIME RECEIVED: 10 AM	DATE RECEIVED: 7/26/96	RECEIVED BY: JM

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☒ Hand Delivery ☐

3C Lab Field Service ☐ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☐ Box ☒

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Temperature _____ °C Ice ☐ Blue Ice ☐ None ☒ If temperature is not between 2 and 6 °C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QT PE UNP																								
PT PE UNP																								
QT INORGANIC METALS																								
PT INORGANIC METALS																								
CN																								
N FORMS																								
SULFIDE																								
NO2/NO3																								
TOC																								
TOX																								
COD																								
PHENOL																								
TRIP BLANK																								
VOA VIAL																								
VOA SET																								
OIL & GREASE																								
ODOR																								
RADIOLOGICAL																								
BACT																								
504																								
507																								
508/608/8080																								
515.1/8150																								
525/625/8270																								
547																								
531.1																								
548																								
549																								
QA/QC																								
QT AMBER																								
8 OZ. JAR																								
3[illegible] JAR																								
SOIL SLEEVE																								
Plastic Bag	X																							

Comments: _____

BC LABORATORIES

SCALE ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1

Sample Description: GMF SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Iron	9.01	%

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/07/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 07/19/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.58	0.1	SW-6010	1.0
Lead	6.4	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods" EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/07/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 07/19/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.56	0.1	SW-6010	1.0
Lead	1.8	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/07/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 07/19/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.52	0.1	SW-6010	1.0
Lead	4.8	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods" EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/05/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	2.9	mg/kg	0.3
Total PCB's (Summation)	2.9	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	114.	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/06/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	1.9	mg/kg	0.3
Total PCB's (Summation)	1.9	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	148.	60-140

Note: Surrogate is high due to matrix interferences.
PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 08/14/96
Date Received: 07/26/96
Laboratory No.: 96-08682-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 7-19-96 @ 0620 THRU 1320 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 07/19/96
Date Extracted: 07/30/96
Date Analyzed: 08/06/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	None Detected	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	None Detected	mg/kg	0.3
PCB-1260	3.0	mg/kg	0.3
Total PCB's (Summation)	3.0	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	110.	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Result corrected for Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES, INC.

October 01, 1996

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 96-10402
Samples Received: 09/06/96

Dear MR. TODD,

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 09/06/96.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER; GENERAL METALS OF TACOMA, INC - RICE BUSE. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 96-10402 when calling for assistance.

Sincerely,

Cheryl Ferguson

CHERYL FERGUSON
Client Services
BC Laboratories, Inc.

[redacted]

96-10402

DISTRIBUTION Jo L | R.F | B.B

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: Special FLuFF Analysis

PRINTED NAME OF SAMPLER(S) Jeff Schaffrath

SIGNATURE OF SAMPLER(S) x Jeff Schaffrath

SAMPLE ID NUMBER	DATE	TIME
GMF 8-28-96	8-28-96	6:25 7:20 8:20 9:25 10:25 11:25 12:25 1:25

RELINQUISHED BY:	RELINQUISHED BY:
Signature x Jeff Schaffrath	Signature
Printed Name Jeff Schaffrath	Printed Name
Company General Metals of Tacoma	Company
Date/Time 8-29-96 / 8:25	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature Richard Buse	Signature Jennifer McMahon
Printed Name Richard Buse	Printed Name J. McMahon
Company General Metals of Tacoma	Company BC Labs
Date/Time 8-29-96 / 8:20	Date/Time 9/6/96 / 10:30AM

SPECIAL INSTRUCTIONS/COMMENTS: Please Send me one copy please
Rick Buse

NUMBERING

BB C 05794

SCHN00244690

BC LABORATORIES INC.

SAMPLE RECEIPT FORM - Rev. No. 2-11/95

LAB NUMBER: 96-10402 | TIME RECEIVED: 10:30AM | DATE RECEIVED: 9/6/96 | RECEIVED BY: JM

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☒ Hand Delivery ☐

BC Lab Field Service ☐ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☐ Box ☒

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Temperature _____ °C Ice ☐ Blue Ice ☐ None ☒ If temperature is not between 2 and 6 °C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QT PE UNP																								
PT PE UNP																								
QT INORGANIC METALS																								
PT INORGANIC METALS																								
CN																								
N FORMS																								
SULFIDE																								
NO./NO.																								
TOC																								
TOX																								
COD																								
PHENOL																								
TRIP BLANK																								
VOA VIAL																								
VOA SET																								
OIL & GREASE																								
ODOR																								
RADIOLOGICAL																								
BACT																								
504																								
507																								
508/608/8080																								
515.1/8150																								
525/625/8270																								
547																								
531.1																								
548																								
549																								
QA/QC																								
QT AMBER																								
8 OZ. JAR																								
32 OZ. JAR																								
SOIL SLEEVE																								
PLASTIC BAG	X																							

Comments: _____

SCHN00244691

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1

Sample Description: GMF 8-28-96 SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results	Units	Method P.O.L.	Method
% Iron	7.89	-	-.	-

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1A

Sample Description: GMF 8-28-96 (SAMPLE #1) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.45	0.1	SW-6010	1.0
Lead	0.66	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1B

Sample Description: GMF 8-28-96 (SAMPLE #2) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.54	0.1	SW-6010	1.0
Lead	2.9	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/19/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1C

Sample Description: GMF 8-28-96 (SAMPLE #3) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sampling Date/Time: 08/28/96

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.60	0.1	SW-6010	1.0
Lead	2.0	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Analytical results corrected for the amount of iron material removed during sample splitting.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1A

Sample Description: GMF 8-28-96 (SAMPLE #1) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.3
PCB-1221	None Detected	mg/kg	0.3
PCB-1232	None Detected	mg/kg	0.3
PCB-1242	2.2	mg/kg	0.3
PCB-1248	None Detected	mg/kg	0.3
PCB-1254	2.5	mg/kg	0.3
PCB-1260	None Detected	mg/kg	0.3
Total PCB's (Summation)	4.7	mg/kg	0.3

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1B

Sample Description: GMF 8-28-96 (SAMPLE #2) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	4.5	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	3.2	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	7.7	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICK BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 09/26/96
Date Received: 09/06/96
Laboratory No.: 96-10402-1C

Sample Description: GMF 8-28-96 (SAMPLE #3) SAMPLED ON 8-28-96 @ 0625 THRU 1325 SAMPLED BY JEFF SCHAFFRATH

Sample Matrix: Solid waste

Date Collected: 08/28/96
Date Extracted: 09/11/96
Date Analyzed: 09/24/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.6
PCB-1221	None Detected	mg/kg	0.6
PCB-1232	None Detected	mg/kg	0.6
PCB-1242	4.3	mg/kg	0.6
PCB-1248	None Detected	mg/kg	0.6
PCB-1254	2.9	mg/kg	0.6
PCB-1260	None Detected	mg/kg	0.6
Total PCB's (Summation)	7.2	mg/kg	0.6

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.
Surrogate not reportable due to sample dilution.
Results corrected for amount of Iron removed.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER
cc: GENERAL METALS OF TACOMA, INC - RICE BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

BC
LABORATORIES

September 18, 1996

Schnitzer Steel Industries, Inc.
P.O. Box 10047
Portland, OR 97210

ATTN: Tim Todd

Dear Mr. Todd,

As per our phone conversation today, we will no longer be removing the "iron" or magnetic material from the samples of auto shredder waste that you submit to us for analysis. In the past we have removed this material and then corrected the results for the amount of this material removed to give you results that reflected the sample as we had received it. As we discussed, we will continue to measure the "iron" content as we have in the past but will then put the "iron" back into the sample prior to splitting it into 3 portions and analyzing for the PCB's and TCLP metals. In this way you will continue to receive results on an "as received" basis as well as the "iron" content for your own quality control purposes, but there will not be the calculated corrections of results.

The samples that are currently in house are being analyzed and reported as we have in the past since they were already in process when we spoke on the phone. Again, I appreciate your time and cooperation with these changes and if you have any questions, please feel free to call me.

Sincerely,

Richard L. Penner
Metals Dept. Supervisor

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

TACOMA-PIERCE COUNTY HEALTH DEPARTMENT

Community Based, Competitive, Integrated, Preventive

Governed by a local Board of Health

Director of Health
FEDERICO CRUZ-URIBE, MD, MPH

October 18, 1996

Timothy R. Todd
Environmental Administrator
Schnitzer Steel Products Co.
P.O. Box 10047
Portland, OR 97210

RE: General Metals of Tacoma - Automobile Shredder Residue Sampling

Dear Mr. Todd:

Thank you for your letter dated October 8, 1996, submitting the sampling results for the General Metals automobile shredder residue, or commonly referred to as auto fluff. Currently, General Metals is disposing of the auto fluff at the Hidden Valley Landfill in Pierce County, Washington. In order to maintain compliance with Washington State's Dangerous Waste Regulations (WAC 173-303) and Washington State's Municipal Solid Waste Landfill Regulations (WAC 173-351), it is necessary that routine testing is continued on the General Metal's Auto Fluff.

Enclosed is a copy of MMI Group's 1991 sampling and analysis plan for the auto fluff generated at General Metals. This is the most recent copy that the Tacoma-Pierce County Health Department has on file. Please review and update this sampling and analysis plan. Also, include into the sampling and analysis plan a description of the chemical treatment process that the auto fluff undergoes at General Metals in order to prevent the leaching of metals (lead and cadmium).

If you have any questions regarding this matter, please contact me at (206)591-6574.

Sincerely,

David Bosch
Environmental Health Specialist
Waste Management Section

cc: Harvey Doman, LRI
Lee Bagley, DOE-SWRO, Hazardous Waste Section (also encl. 10/8/96 letter from Schnitzer Steel Products Co.)

G:\LIBSHARE\WSTMGT\FACIL\HVLF\1996\ATOFLF.LTR

3629 South D Street • Tacoma, Washington 98408-6897 ✪ 206/591-6500

GENERAL METALS OF TACOMA

FLUFF SAMPLING AND ANALYSIS PROGRAM

I. INTRODUCTION

This program describes the quarterly sampling and analysis of shredder residue (fluff) and is an important part of the General Metals of Tacoma (GMT) environmental plan. These instructions must be followed faithfully to insure compliance with local, state and federal rules and regulations.

II. RESPONSIBILITY

A. It is the responsibility of the GMT Plant Manager to insure that the sampling, packaging and transportation requirements of this program are met.

B. It is the responsibility of BC Laboratories, Inc. to insure that the testing and reporting requirements of this program are met.

III. FORMS USED

A. Chain of Custody (Figure 1)

B. Laboratory Report Form (Figure 2)

IV. PROCEDURE

A. Field Sampling

1. Frequency: Field samples will be collected on the 15th of February, May, August and November. If the 15th falls on a Saturday, samples will be collected on the preceding Friday. If the 15th falls on a Sunday, samples will be collected on the following Monday.

2. Safety and Health: Each sampler must wear the safety equipment required for workers at the shredder.

3. Prevention of Cross Contamination: In addition to the safety equipment required for workers at the shredder, each sampler will wear a new pair of latex gloves to collect <u>each</u> sample.

4. Collection Procedures:

a. Eight samples of fluff will be collected at the following times (+ 5 minutes) on the day designated for sampling:

(1) 8 A.M.
(2) 9 A.M.
(3) 10 A.M.
(4) 11 A.M.
(5) 1 P.M.
(6) 2 P.M.
(7) 3 P.M.
(8) 4 P.M.

b. Each sample should consist of about 1 liter of fluff taken from the top of the fluff pile under the fluff conveyor. It is intended that this procedure will collect samples that were produced at hourly intervals throughout the day.

c. All material should be collected <u>by hand.</u> Do not use shovels, trowels, cans, etc. Place all of the material collected each hour in a heavy duty garbage bag that was new and unused when the 8 A.M. sample was placed in it.

d. The sampler must maintain control of the sample bag throughout the day. If more than one sampler or set of samplers collected material, the names of the individuals and the samples they collected must be noted on the Chain of Custody form.

e. Changing gloves is an important part of this procedure to prevent cross contamination of samples through handling.

f. After all samples have been collected, close the sample bag by either tying a knot in the bag or by closing the top with a tie strap.

B. Preparing the sample for shipment:

1. Identify the fluff sample using the following code.

Prefix: GMF-(for General Metals Fluff)
Suffix: 15 Feb 89 (Day, Month and Year Collected)

Typical codings would be:

GMF - 15 Mar 89
GMF - 15 Jun 89
GMF - 15 Sep 89
etc.

Write the code on a GMT envelope.

2. Prepare a Chain of Custody form per the example in Figure 1. Place the form in the envelope and attach to the sample bag.

   Retain a copy for GMT files.

3. Package the bag of fluff samples in a sturdy shipping box and ship via UPS to:

   Ms. Karen Bonanno
   BC Laboratories Inc.
   4100 Atlas Court
   Bakersfield, CA 93308

   Be sure to attach the shipping papers to the GMT copy of the Chain of Custody form.

C. Receipt of sample at BC Laboratories, Inc.:

1. Following a careful inspection of the inner and outer packaging, the lab should fill in the appropriate block on the Chain of Custody form and send copies of the signed form to:

   Norman D. Webb
   MMI Group
   4927 NW Front Avenue
   Portland, OR 97210

D. Analysis of Sample:

1. PCB

   a. Analysis of three representative samples will be conducted in accordance with the BC Laboratories, Inc. standard procedure. (See Figure 3)

   b. The BC Laboratories, Inc., procedure was developed by the lab with the assistance of outside consultants and is used on a regular basis to test fluff from shredders throughout California.

2. TCLP (cadmium and lead only) per EPA methods.

E. Laboratory Reports:

1. One page lab reports for each sample in the format shown in Figure 2 will be promptly prepared and mailed to:

Norman D. Webb
MMI Group
4927 NW Front Avenue
Portland, OR 97210

2. In addition, test results will be faxed on the day they become known to Norman D. Webb at (fax) 503-241-0391

3. Invoices should also be mailed to Norman D. Webb in Portland.

F. Unused fluff will be disposed of monthly with other lab wastes in accordance with California rules and regulations.

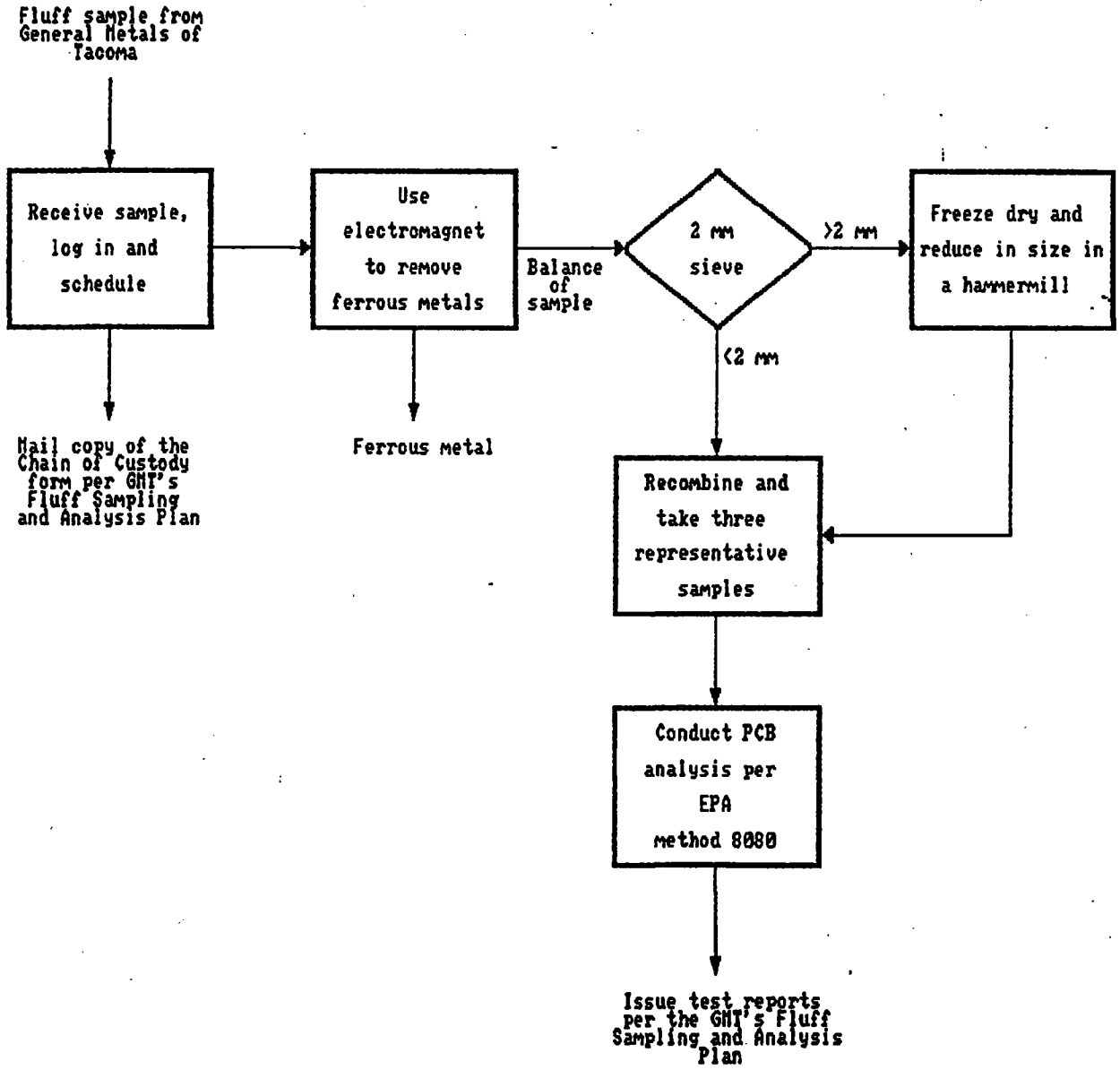
G. Reporting of Results by GMT

Test results will be sent to designated regulatory agency individuals within 48 hours of the receipt of the mailed copies of the test reports from the laboratory.

FLUFF TESTING PROCEDURE

BC LABORATORIES, INC.
BAKERSFIELD, CALIFORNIA

(PCB'S)



\fluff-bc
15 Nov 90

FIGURE 3

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: _____

PRINTED NAME OF SAMPLER(S) _____

_____

SIGNATURE OF SAMPLER(S) _____

_____

SAMPLE ID NUMBER	DATE	TIME

RELINQUISHED BY:	RELINQUISHED BY:
Signature _____	Signature _____
Printed Name _____	Printed Name _____
Company _____	Company _____
Date/Time _____/_____	Date/Time _____/_____
RECEIVED BY:	**RECEIVED BY:**
Signature _____	Signature _____
Printed Name _____	Printed Name _____
Company _____	Company _____
Date/Time _____/_____	Date/Time _____/_____

SPECIAL INSTRUCTIONS/COMMENTS: _____

_____

_____

_____

_____

CHAIN OF CUSTODY

General Metals of Tacoma
Tacoma, WA 98422

PROJECT: MONTHLY FLUFF ANALYSIS

PRINTED NAME OF SAMPLER(S) ROBERT B. VAIL

SIGNATURE OF SAMPLER(S) Robert B Vail

SAMPLE ID NUMBER	DATE	TIME
GMT-10FEB89	10 FEB 89	8-9-10-11-1-2-3-4

RELINQUISHED BY:	RELINQUISHED BY:
Signature Robert B. Vail	Signature
Printed Name ROBERT B. VAIL	Printed Name
Company GENERAL METALS OF TACOMA	Company
Date/Time 10 FEB 89 / 4:30 P.M.	Date/Time /
RECEIVED BY:	**RECEIVED BY:**
Signature	Signature
Printed Name	Printed Name
Company	Company
Date/Time /	Date/Time /

SPECIAL INSTRUCTIONS/COMMENTS: SHIPPED VIA UPS

FIGURE 1

SCHN00244707

ENVIRONMENTAL
CHEMICAL ANALYSIS
PETROLEUM

BC LABORATORIES, INC.
J. J. EGLIN, REG. CHEM. ENGR.
4100 ATLAS CT., BAKERSFIELD, CALIFORNIA 93308 PHONE (805) 327-4911 FAX (805) 327-1918

EPA 8080 For PCB's

GENERAL METALS OF TACOMA
1902 MARINE VIEW DRIVE
TACOMA, WA 98422
000-0000

Date of Report:
Lab #:

Sample Description: MONTHLY FLUFF SAMPLE , #

Test Method: EPA Method 8080
As Received Basis

Sample Matrix: FLUFF

Date Sample Collected:

Date Sample Received @ Lab:

Date Analysis Completed:

Constituents	Reporting Units	Analysis Results	Minimum Reporting Level
PCB-1016	ug/g		
PCB-1221	ug/g		
PCB-1232	ug/g		
PCB-1242	ug/g		
PCB-1248	ug/g		
PCB-1254	ug/g		
PCB-1260	ug/g		

Comments:

California D.O.H.S. Cert. #1186

BY J. J. Eglin

S. Khalid

FIGURE 2

MMI

Group

August 12, 1991

Mr. Gary Kato
Tacoma-Pierce County Health Department
3629 South D Street
Tacoma, WA 98408

Re: Fluff at General Metals of Tacoma

Dear Mr. Kato:

I am writing to confirm our telephone conversation of this date regarding fluff at General Metals of Tacoma. Per your requests, I have attached the latest revision of the GMT Fluff Sampling and Analysis Plan and will arrange to have future samples of fluff analyzed for total metals (lead and cadmium).

Regarding the Fluff Pilot Study which was issued by EPA on May 28, 1991, GMT has suggested that a meeting be held in Tacoma with you and Ecology so that GMT can comment on the EPA study as well as discuss operations at the GMT site. It is my understanding that you will pursue this idea and that a meeting may be possible within the next two or three weeks.

Regards,

MMI GROUP

Norman D. Webb
Assistant to the President

NDW/ka

RECEIVED
AUG 14 1991
TACOMA-PIERCE CO. HEALTH DEPT.
ENVIRONMENTAL HEALTH DIVISION

4927 N.W. Front Avenue • Portland, Oregon 97210 U.S.A. • Phone (503) 227-5501 • Telex WU 360501

FLUFF SAMPLING AND ANALYSIS PROGRAM

General Metals of Tacoma
1902 Marine View Drive
Tacoma, WA 98422

Issued	3 Mar 89
Revised	1 May 89
	15 Nov 90
	13 Mar 91

BOARD OF YAKIMA COUNTY COMMISSIONERS
CONTRACT RENEWAL AGREEMENT

WHEREAS, a Contract for Freon, Compressor Motor and Oil Recovery/Removal from Refrigeration Units at the Cheyne and Snipes Mountain Landfills was awarded to Keith Fansler, dba Keith's Appliance Repair for a term beginning August 26, 1992 and ending December 31, 1993.

WHEREAS, the bid specifications state that the contract may be extended from year to year; and,

WHEREAS, it is in the best interest of Yakima County to renew the Contract for an additional one (1) year period; and,

WHEREAS, Keith Fansler, dba Keith's Appliance Repair has agreed to renew for an additional one (1) year contract extension at the same price as listed in the bid contract, hereto incorporated by reference;

IT IS AGREED BETWEEN THE PARTIES THAT:

(1) The contract period shall be renewed and shall be from:

January 1, 1996 to December 31, 1996

(2) The terms of the original attached contract signed January 12, 1993 will remain the same, provided that the price shall be adjusted as follows: to recover freon, remove compressor motor and drain oil from the motor $15.50/unit. On refrigeration units which do not contain freon; remove compressor motor and drain oil from the motor $8.00/unit.

Done this 26th day of December, 1995

CONTRACTOR

Signature

KEITH E. FANSLER
Print Name

12/15/95
Date Signed

BOARD OF YAKIMA COUNTY COMMISSIONERS

Chairman

Commissioner

Commissioner

APPROVED AS TO FORM

Deputy Prosecuting Attorney
Date:

ATTEST: Sylvia E. Dinojosa, Clerk of the Board

Sylvia E. Dinojosa
Date: Dec. 26, 1995

Yakima County Public Works
Solid Waste Division
105 East "A" Street
Yakima Wa, 98901

TO: Mick
RS Davis

PHONE:
FAX: (503) 657-6131

FROM: Rhonda

PHONE: (509) 574-2456

DATE: 11/8/96 TIME: 1:45 # OF PAGES: 2

MESSAGE: Mick -
Did this do ?? If not let me know and I'll find the whole contract.
RJ

To: Tim Todd
From: Mick Doane

SOLID WASTE MAIN PHONE NUMBER (509) 574-2450
SOLID WASTE ACCOUNTING PHONE NUMBER (509) 574-2460
FAX NUMBER: (509) 574-2281

11/08/1996 16:38 5036576131 RSDAVISRECY PAGE 01

SCHN00244712

SCHNITZER STEEL PRODUCTS CO.

N. Burgard St. Portland, Oregon 97203
P.O. Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

November 15, 1996

Mr. David Bosch
Environmental Health Specialist
Waste Management Section]
Tacoma-Pierce County Health Department
3629 South D Street
Tacoma, WA 98408-6897

Re: General Metals of Tacoma - Automobile Shredder Residue Sampling

Dear Mr. Bosch:

I have revised and updated the sampling plan for the General Metals of Tacoma automobile shredder residue, as requested in your October 18, 1996, letter. The sampling plan now includes a brief description of the treatment process, and reflects current procedures and personnel.

Please contact me if you have questions at (503) 286-6944.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Post-it® Fax Note 7671	Date 9/11	# of pages ▶ 7
To Bill Berlang	From Tim Todd	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

General Metals of Tacoma

Shredder Residue Sampling and Analysis Program
(Revised 11/96)

I. Introduction

This program describes the quarterly sampling and analysis of automobile shredder residue (ASR), and is supplemental to the General Metals of Tacoma (GMT) environmental plan. These procedures are designed to be consistent with local, state, and federal regulations.

ASR at the GMT facility is currently treated with sodium silica and type I cement to reduce the potential for metals to leach from the material. The treatment compounds are added to the ASR at the approximate rates of 1 gallon per ton of sodium silica and 10 pounds per ton of cement. The compounds are continuously mixed with ASR in an auger that is approximately 16 feet in length, rotating at approximately 20 revolutions per minute.

II. Responsibility

A. It is the responsibility of the GMT Plant Manager to insure that the sampling, storage, and shipping requirements of this program are maintained.

B. It is the responsibility of BC Laboratories to insure that the analytical testing and reporting requirements of this program are maintained.

III. Procedures

A. ASR Sampling

1. Frequency: ASR samples will be collected and analyzed at least four times annually. Sampling events will be conducted once per calendar quarter.

2. Safety and health: Sample collection personnel must wear the safety equipment required for workers at the shredder.

3. Sample collection:

   a. A sample volume of approximately one quart will be collected eight times during the sampling day at the

frequency of one sample per hour (+/- 5 minutes) from the top of the ASR pile immediately beneath the ASR conveyor.

b. A new heavy duty plastic garbage bag will be used to contain each of the 8 ASR samples collected during the sample day. Each sample volume must be collected by hand using a new pair of disposable neoprene gloves.

c. The sampler must maintain custody of the sample container at all times. If more than one sampler collects material, the names of the individuals and the samples collected by each must be recorded on the chain of custody form.

d. After all samples have been collected, the sample bag should be securely tied to prevent spillage or leakage.

B. Preparing the Sample for Shipment

1. Identify the ASR sample as follows:
Prefix: GMF-
Suffix: Day, month, and year collected.
The following is an example for a sample collected on November 15, 1996:
GMF-15 Nov 96

Record the sample identity and other sampling details on a chain of custody form. Retain a copy of the original form for GMT files. Attach the form to the sample bag, and secure the sample and form in a sturdy shipping container. Ship the container via UPS to :

BC Laboratories
4100 Atlas Court
Bakersfield, CA 93008

C. Receipt and Analysis of Sample by BC Laboratories

1. After inspecting the sample and container to verify proper shipping and packaging, BC Laboratories will complete the chain of custody form and mail a copy to:

Tim Todd
Schnitzer Steel Industries, Inc.
PO Box 10047
Portland, OR 97210

D. Analysis of Sample

1. PCB

a. Three representative samples will be split from the original sample volume. Each of the three samples will be analyzed for PCB consistent with the standard procedures developed by BC Laboratories and outside consultants.

2. Each of the three representative samples split from the original, as prescribed in 1.a. above, will be analyzed for cadmium and lead per U.S. Environmental Protection Agency TCLP methods.

E. Laboratory Reports:

1. A laboratory report summarizing analytical and quality assurance and control data will be prepared and mailed to:

Tim Todd
Schnitzer Steel Industries
PO Box 10047
Portland, OR 97210

and to:

Rick Busey
General Metals of Tacoma
1902 Marine View Drive
Tacoma, WA 98422

A preliminary report should be prepared as soon as data is available and faxed to:

Tim Todd
Schnitzer Steel Industries
503/286-6944

Invoices should be mailed to Tim Todd at the above address.

F. The ASR sample and associated wastes will be disposed after 30 days of receipt by BC Laboratories in accordance with applicable regulations.

G. Reporting of Test Results
Test results will be mailed by GMT within 10 days of receipt of the final report to:

Tacoma-Pierce County Health Department
3629 South D Street
Tacoma, WA 98408-6897

BC LABORATORIES, INC.

FACSIMILE TRANSMISSION COVER SHEET

DATE OF TRANSMISSION: 12-31-96 **FAX NUMBER:** 504/286-6918

ATTENTION: Tim Todd

COMPANY: Schutter Steel Industries

FROM: Cheryl Jorgenson
BC LABORATORIES, INC.
FAX NUMBER (805) 327-1918

COMMENTS: [illegible]

ANY PROBLEMS WITH TRANSMISSION, PLEASE CALL: (805) 327-4911 EXT. 201

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alterations, separation, detachment or third party interpretation.

Transmitted by: ERIN

NUMBER OF PAGES (including cover sheet): 5

[illegible] CA 93308 · (805) 327-4911 · FAX (805) 327-1918

1. Larry - safety team
2. Dennis H.
3. Jim McCulloch

SCHN00244721

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.65	0.1	SW-6010
Lead	None Detected	0.5	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. - Bakersfield, CA 93308 - (805) 327-4911 - FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.64	0.1	SW-6010
Lead	None Detected	0.5	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 324-1821

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.70	0.1	SW-6010
Lead	None Detected	0.5	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis.
Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-1911 · FAX (805) 327-1918

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1

Sample Description: GMF SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Sampling Date/Time: 12/10/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
% Iron Material	7.35	%	-	-

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

SCHNITZER STEEL PRODUCTS CO.

1[illegible] N. Burgard St. Portland, Oregon 97203
P[illegible]x 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

January 20, 1997

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

Copies of the laboratory reports for the most recent automobile shredder residue sampling events are attached, along with tabulated historical sampling data. A statistical evaluation conducted by methods prescribed in the August 1993 U.S. Environmental Protection Agency field manual entitled Sampling Guidance for Scrap Metal Shredders is included.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments

SCHNITZER STEEL PRODUCTS CO.

15 N. Burgard St. Portland, Oregon 97203
Box 10047 Portland, Oregon 97210
Phone 503/286-5771 FAX 503/286-6948

January 20, 1997

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

Copies of the laboratory reports for the most recent automobile shredder residue sampling events are attached, along with tabulated historical sampling data. A statistical evaluation conducted by methods prescribed in the August 1993 U.S. Environmental Protection Agency field manual entitled Sampling Guidance for Scrap Metal Shredders is included.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd
Environmental Administrator

Attachments

NERAL METALS OF TACOMA
RY OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm) #1	PCB (ppm) #2	PCB (ppm) #3	PCB (ppm) AVE	CADMIUM TCLP (ppm) #1	CADMIUM TCLP (ppm) #2	CADMIUM TCLP (ppm) #3	CADMIUM TCLP (ppm) AVE	LEAD TCLP (ppm) (5 ppm max.) #1	LEAD TCLP (ppm) (5 ppm max.) #2	LEAD TCLP (ppm) (5 ppm max.) #3	LEAD TCLP (ppm) (5 ppm max.) AVE
EB 89	44.0	31.0	51.0	42.0								
EB 89	45.0	15.0	13.0	24.3								
FEB 89	39.0	10.0	30.0	26.3								
AR 89	20.0	8.0	12.0	13.3								
AR 89	23.0	9.6	26.0	19.5								
PR 89	14.0	31.0	17.0	20.7								
AY 89	16.0	19.0	18.0	17.7								
UN 89	40.0	26.0	110.0	58.7								
UL 89	9.0	15.0	8.0	10.7								
UG 89	40.0	6.0	12.0	19.3								
EP 89	22.0	29.0	17.0	22.7								
CT 89	5.5	4.4	4.3	4.7								
OV 89	35.0	24.0	22.0	27.0								
EC 89	5.5	4.2	3.3	4.3								
90	62.0	52.0	53.0	55.7								
EB 90	62.0	47.0	12.0	40.3								
AR 90	23.0	21.0	27.0	23.7								
PR 90	22.0	29.0	27.0	26.0								
AY 90	9.7	8.4	9.6	9.2								
UN 90	15.0	17.0	33.0	21.7								
UL 90	10.0	7.3	45.0	20.8								
UG 90	8.8	9.2	10.0	9.3								
EP 90	34.0	37.0	45.0	38.7								
CT 90	3.0	12.0	12.0	9.0								
OV 90	9.0	10.0	7.0	8.7								
EC 90	12.0	14.0	14.0	13.3	0.27	0.28	0.35	0.30	0.16	0.28	0.26	0.23
AN 91	11.0	9.0	4.0	8.0	0.81	0.54	0.57	0.64	3.32	1.43	1.25	2.00
EB 91	18.0	28.0	12.0	19.3	0.27	0.28	0.25	0.267	0.18	0.25	0.25	0.227
AY 91	13.0	30.0	17.0	20.0	1.38	1.14	1.16	1.227	15.1	15.0	14.1	14.7
UN 91	33.0	9.0	14.0	18.7	0.19	0.21	0.20	0.20	0.33	0.26	0.33	0.31
UN 91					0.57	0.59	0.61	0.59	5.01	4.85	4.40	4.75
UN 91					0.07	0.07	0.06	0.067	0.26	0.30	0.28	0.28
UL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
EP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.15	0.16
CT 91	13.0	8.5	9.4	10.3								
2	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
PR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
UL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
CT 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
EB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
PR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2

SCHN00244728

AY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
UL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
CT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
EB 94	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
PR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
UL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
EP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
EP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
EP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
AN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
EP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
AN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
AY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
UL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
UG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85
EC 96	3.2	6.9	8.7	6.3	0.70	0.64	0.65	0.66	0.50	0.50	0.50	0.50

	PCB	Cadmium	Lead
Sum	2757.4	41.49	244.98
Average	19.15	0.4939	2.9164
Median	12.00	0.4200	1.7000
Variance	224.51	0.0544	9.4210
d Dev.	14.98	0.2333	3.0694
lue for Conf.	1.98	1.9900	1.9900
lue for Hyp.	1.65	1.6700	1.6700
LCL	16.68	0.4433	2.2500
UCL	21.62	0.5446	3.5829
t-Off Value	52.06	1.0425	5.5593

BC LABORATORIES, INC.

January 06, 1997

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 96-14516
Samples Received: 12/16/96

Dear Mr. Todd:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 12/16/96.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 96-14516 when calling for assistance.

Sincerely,

Cheryl Ferguson

Cheryl Ferguson
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1

Sample Description: GMF SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Sampling Date/Time: 12/10/96

Constituents	Sample Results	Units	Method P.Q.L.	Method
% Iron Material	7.35	%	-.	-

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.70	0.1	SW-6010
Lead	None Detected	0.5	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis.
Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.64	0.1	SW-6010
Lead	None Detected	0.5	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis.
Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 12/31/96
Date Received: 12/16/96
Laboratory No.: 96-14516-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Constituents	Sample Results mg/liter	Method Detection Limit	Analytical Method
Cadmium	0.65	0.1	SW-6010
Lead	None Detected	0.5	SW-6010

Comment: All extract contaminants reported in mg/liter on a filtrate basis.
Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/02/97
Date Received: 12/16/96
Laboratory No.: 96-14516-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Sample Matrix: Solid waste

Date Collected: 12/10/96
Date Extracted: 12/19/96
Date Analyzed: 12/29/96

Constituents	Analysis Results	Reporting Units	Method Detection Limit
PCB-1016	None Detected	mg/kg	0.5
PCB-1221	None Detected	mg/kg	0.5
PCB-1232	None Detected	mg/kg	0.5
PCB-1242	3.2	mg/kg	0.5
PCB-1248	None Detected	mg/kg	0.5
PCB-1254	None Detected	mg/kg	0.5
PCB-1260	None Detected	mg/kg	0.5
Total PCB's (Summation)	3.2	mg/kg	0.5

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/02/97
Date Received: 12/16/96
Laboratory No.: 96-14516-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Sample Matrix: Solid waste

Date Collected: 12/10/96
Date Extracted: 12/19/96
Date Analyzed: 12/29/96

Constituents	Analysis Results	Reporting Units	Method Detection Limit
PCB-1016	None Detected	mg/kg	0.9
PCB-1221	None Detected	mg/kg	0.9
PCB-1232	None Detected	mg/kg	0.9
PCB-1242	6.9	mg/kg	0.9
PCB-1248	None Detected	mg/kg	0.9
PCB-1254	None Detected	mg/kg	0.9
PCB-1260	None Detected	mg/kg	0.9
Total PCB's (Summation)	6.9	mg/kg	0.9

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 01/02/97
Date Received: 12/16/96
Laboratory No.: 96-14516-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 12-10-96 @ 0745 THRU 1500 BY JEFF S.

Sample Matrix: Solid waste

Date Collected: 12/10/96
Date Extracted: 12/19/96
Date Analyzed: 12/29/96

Constituents	Analysis Results	Reporting Units	Method Detection Limit
PCB-1016	None Detected	mg/kg	1.
PCB-1221	None Detected	mg/kg	1.
PCB-1232	None Detected	mg/kg	1.
PCB-1242	8.7	mg/kg	1.
PCB-1248	None Detected	mg/kg	1.
PCB-1254	None Detected	mg/kg	1.
PCB-1260	None Detected	mg/kg	1.
Total PCB's (Summation)	8.7	mg/kg	1.

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - MIKE VAIL - PLANT MANAGER

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

OLYMPIC VIEW SANITARY LANDFILL, INC.
A USA WASTE SERVICES CO.

20 April 1997

Mr. Tim Todd
Schnitzer Steel Products Co., Inc.
P.O. Box 10047
Portland, OR 97210
Fax: (503) 288-6948

RE: ANALYTICAL SUPPORT DATA COLLECTED FOR OVSL

Dear Mr. Todd:

Thank you very much for your assistance in getting us the necessary EPA Documentation. We are currently submitting a waste disposal application to our regulators for approval and accept to be signing a contract with General Metals of Tacoma for the disposal of their ASR waste stream.

Please allow me to extend an invitation, if you are ever in our area, to come inspect our operation and tour our facility. In the mean time if I can be of any further assistance or answer any additional questions feel free to call me at (360) 415-2756.

Again, allow me to extend my thanks for all of your assistance in the process.

Sincerely,
Olympic View Sanitary Landfill, Inc.

John Fenning
Sales Consultant

P.O. BOX 990 • BREMERTON, WA 98337 • PHONE (360) 674-2331 • FAX (360) 674-2370

SCHNITZER STEEL PRODUCTS CO.
3200 NW Yeon Avenue P.O. Box 10047 Portland, Oregon 97296-0047
Phone (503) 286-5771 Telex 289875 FAX (503) 286-6948

April 28, 1997

Mr. David Bosch
Tacoma Pierce County Health Department
3639 South D Street
Tacoma, WA 98408

Re: General Metals of Tacoma

Dear Mr. Bosch:

Copies of the laboratory report for the most recent automobile shredder residue sampling event is attached, along with tabulated historical sampling data.

Please contact me at (503) 286-6944 if you have questions.

Sincerely,
Schnitzer Steel Industries, Inc.

Timothy R. Todd

Timothy R. Todd
Environmental Administrator

Attachments

GENERAL METALS OF TACOMA
SUMMARY OF AUTOMOBILE SHREDDER RESIDUE (ASR) ANALYSES

SAMPLE DATE	PCB (ppm)				CADMIUM TCLP (ppm)				LEAD TCLP (ppm) (5 ppm max.)			
	#1	#2	#3	AVE	#1	#2	#3	AVE	#1	#2	#3	AVE
3 FEB 89	44.0	31.0	51.0	42.0								
3 FEB 89	45.0	15.0	13.0	24.3								
MID FEB 89	39.0	10.0	30.0	26.3								
10 MAR 89	20.0	8.0	12.0	13.3								
24 MAR 89	23.0	9.6	26.0	19.5								
10 APR 89	14.0	31.0	17.0	20.7								
10 MAY 89	16.0	19.0	18.0	17.7								
9 JUN 89	40.0	26.0	110.0	58.7								
10 JUL 89	9.0	15.0	8.0	10.7								
10 AUG 89	40.0	6.0	12.0	19.3								
11 SEP 89	22.0	29.0	17.0	22.7								
10 OCT 89	5.5	4.4	4.3	4.7								
10 NOV 89	35.0	24.0	22.0	27.0								
11 DEC 89	5.5	4.2	3.3	4.3								
10 JAN 90	62.0	52.0	53.0	55.7								
9 FEB 90	62.0	47.0	12.0	40.3								
9 [illegible]R 90	23.0	21.0	27.0	23.7								
14 [illegible] R 90	22.0	29.0	27.0	26.0								
15 MAY 90	9.7	8.4	9.6	9.2								
15 JUN 90	15.0	17.0	33.0	21.7								
16 JUL 90	10.0	7.3	45.0	20.8								
15 AUG 90	8.8	9.2	10.0	9.3								
14 SEP 90	34.0	37.0	45.0	38.7								
15 OCT 90	3.0	12.0	12.0	9.0								
16 NOV 90	9.0	10.0	7.0	8.7								
14 DEC 90	12.0	14.0	14.0	13.3	0.27	0.28	0.35	0.30	0.16	0.28	0.26	0.23
15 JAN 91	11.0	9.0	4.0	8.0	0.81	0.54	0.57	0.64	3.32	1.43	1.25	2.00
15 FEB 91	18.0	28.0	12.0	19.3	0.27	0.28	0.25	0.267	0.18	0.25	0.25	0.227
15 MAY 91	13.0	30.0	17.0	20.0	1.38	1.14	1.16	1.227	15.1	15.0	14.1	14.7
6 JUN 91	33.0	9.0	14.0	18.7	0.19	0.21	0.20	0.20	0.33	0.28	0.33	0.31
11 JUN 91					0.57	0.59	0.61	0.59	5.01	4.85	4.40	4.75
13 JUN 91					0.07	0.07	0.06	0.067	0.26	0.30	0.28	0.28
24 JUL 91	20.0	30.0	31.0	27.0	0.15	0.17	0.14	0.153	0.07	0.06	0.10	0.08
4 SEP 91					0.07	0.07	0.07	0.07	0.16	0.16	0.15	0.16
14 OCT 91	13.0	8.5	9.4	10.3								
21 JAN 92	30.0	17.0	19.0	22.0	0.09	0.12	0.09	0.10	0.72	0.67	0.68	0.69
22 APR 92	12.0	20.0	9.3	13.8	0.22	0.26	0.11	0.20	0.28	0.10	0.20	0.19
30 JUL 92	19.0	14.0	12.0	15.0	0.51	0.53	0.48	0.51	2.50	2.50	2.20	2.40
21 [illegible] T 92	11.2	10.8	12.1	11.4	0.32	0.33	0.32	0.32	2.40	2.30	2.60	2.43
15 FEB 93	6.0	7.0	6.0	6.3	0.32	0.30	0.35	0.32	1.70	2.20	3.40	2.43
27 APR 93	6.3	7.0	7.0	6.8	0.54	0.48	0.52	0.51	11.0	9.6	10.0	10.2

27 MAY 93	8.4	19.0	20.0	15.8	0.57	0.52	0.62	0.57	2.60	1.70	2.20	2.17
02 JUN 93	43.0	13.0	11.0	22.3	0.15	0.15	0.11	0.14	0.41	0.38	0.60	0.46
07 JUN 93	16.0	13.0	13.0	14.0	0.32	0.30	0.29	0.30	0.83	0.78	0.77	0.79
27 JUL 93	33.0	23.0	30.0	28.7	0.42	0.38	0.37	0.39	3.00	2.40	2.10	2.50
27 OCT 93	10.8	14.1	10.9	11.9	0.39	0.35	0.37	0.37	2.70	2.50	2.90	2.70
2[illegible]B 94	16.8	5.1	24.8	15.6	0.39	0.44	0.37	0.40	3.00	3.50	3.20	3.23
29 APR 94	8.2	0.5	0.5	2.7	0.37	0.48	0.43	0.43	2.10	3.30	4.30	3.23
27 JUL 94	0.5	0.5	0.5	0.0	0.58	0.87	0.61	0.69	2.60	8.50	4.80	5.30
07 SEP 94					0.32	0.44	0.37	0.38	0.81	0.95	0.93	0.90
13 SEP 94					0.57	0.53	0.63	0.58	3.60	2.90	4.60	3.70
15 SEP 94					0.33	0.32	0.33	0.33	1.30	1.20	0.78	1.09
25 JAN 95	4.9	8.0	0.5	4.3	0.52	0.51	0.52	0.52	1.50	1.80	1.10	1.47
11 SEP 95	8.5	6.9	7.9	7.8	0.47	0.54	0.52	0.51	4.50	3.80	5.00	4.43
19 JAN 96	6.3	3.6	8.2	6.0	0.50	0.50	0.54	0.51	1.70	1.60	0.52	1.27
30 MAY 96	7.5	8.5	9.4	8.5	0.46	0.58	0.47	0.50	0.50	0.81	0.50	0.60
19 JUL 96	2.9	1.9	3.0	2.6	0.58	0.56	0.52	0.55	6.40	1.80	4.80	4.33
28 AUG 96	4.7	7.7	7.2	6.5	0.45	0.54	0.60	0.53	0.66	2.90	2.00	1.85
12 DEC 96	3.2	6.9	8.7	6.3	0.70	0.64	0.65	0.66	0.50	0.50	0.50	0.50
25 MAR 97	14.0	14.4	15.6	14.7	1.00	0.90	0.77	0.89	1.50	2.90	2.20	2.20

	PCB	Cadmium	Lead
Sum	2801.4	44.16	251.58
Average	19.45	0.5257	2.9950
Median	12.55	0.4350	1.7000
Variance	220.48	0.0596	9.1553
Standard Dev.	14.85	0.2440	3.0258
T-Value for Conf.	1.98	1.9900	1.9900
T-Value for Hyp.	1.65	1.6700	1.6700
LCL	17.00	0.4727	2.3380
UCL	21.90	0.5787	3.6520
Cut-Off Value	52.04	1.0445	5.5513

BC LABORATORIES, INC.

April 21, 1997

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 97-03312
Samples Received: 03/31/97

Dear Mr. Todd:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 03/31/97.

Enclosed please find the analytical data for the testing requested. A copy of the results for this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 97-03312 when calling for assistance.

Sincerely,

Cheryl Ferguson

Cheryl Ferguson
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

CHEMICAL ANALYSIS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/04/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1

Sample Description: GMF SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sampling Date/Time: 03/25/97

Constituents	Sample Results	Units	Method P.Q.L.	Method
% Iron Material	3.12			

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

Note: Iron content determined by passing a magnet over the sample and weighing particles > 2mm in diameter prior to milling or splitting the sample for analysis.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/04/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sampling Date/Time: 03/25/97

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	1.0	0.1	SW-6010	1.0
Lead	1.5	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Iron content removed from sample with a magnet prior to testing.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/04/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sampling Date/Time: 03/25/97

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.90	0.1	SW-6010	1.0
Lead	2.9	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Iron content removed from sample with a magnet prior to testing.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/04/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sampling Date/Time: 03/25/97

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	0.77	0.1	SW-6010	1.0
Lead	2.2	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

Note: Iron content removed from sample with a magnet prior to testing.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/17/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1A

Sample Description: GMF (SAMPLE #1) SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sample Matrix: Solid waste

Date Collected: 03/25/97
Date Extracted: 04/08/97
Date Analyzed: 04/11/97

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	2.
PCB-1221	None Detected	mg/kg	2.
PCB-1232	None Detected	mg/kg	2.
PCB-1242	11.	mg/kg	2.
PCB-1248	None Detected	mg/kg	2.
PCB-1254	3.0	mg/kg	2.
PCB-1260	None Detected	mg/kg	2.
Total PCB's (Summation)	14.	mg/kg	2.

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: Surrogate not reportable due to sample dilution.
PQL's were raised due to high concentration of target analytes requiring sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/17/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1B

Sample Description: GMF (SAMPLE #2) SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sample Matrix: Solid waste

Date Collected: 03/25/97
Date Extracted: 04/08/97
Date Analyzed: 04/11/97

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	2.
PCB-1221	None Detected	mg/kg	2.
PCB-1232	None Detected	mg/kg	2.
PCB-1242	11.	mg/kg	2.
PCB-1248	None Detected	mg/kg	2.
PCB-1254	3.4	mg/kg	2.
PCB-1260	None Detected	mg/kg	2.
Total PCB's (Summation)	14.4	mg/kg	2.

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: Surrogate not reportable due to sample dilution.
PQL's were raised due to high concentration of target analytes requiring sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. · Bakersfield, CA 93308 · (805) 327-4911 · FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 04/17/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1C

Sample Description: GMF (SAMPLE #3) SAMPLED ON 3-25-97 @ 0730 THRU 3:30PM BY ROGER S.

Sample Matrix: Solid waste

Date Collected: 03/25/97
Date Extracted: 04/08/97
Date Analyzed: 04/11/97

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	2.
PCB-1221	None Detected	mg/kg	2.
PCB-1232	None Detected	mg/kg	2.
PCB-1242	11.	mg/kg	2.
PCB-1248	None Detected	mg/kg	2.
PCB-1254	4.6	mg/kg	2.
PCB-1260	None Detected	mg/kg	2.
Total PCB's (Summation)	15.6	mg/kg	2.

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	Not Reportable	60-140

Note: Surrogate not reportable due to sample dilution.
PQL's were raised due to high concentration of target analytes requiring sample dilution.

California D.O.H.S. Cert. #1186

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES, INC.

July 10, 1997

TIM TODD
SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210

Subject: Laboratory Submission No.: 97-03312 - QC Report
Samples Received: 03/31/97

Dear Mr. Todd:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 03/31/97. Results were reported on 04/21/97.

Enclosed please find the quality control (QC) report associated with these samples.

A copy this submission will be sent to the following: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE. If you have any questions regarding this report please contact me at (805)327-4911, ext. 250.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of $5 per sample may apply for solid sample matrices.

Please refer to submission number 97-03312 when calling for assistance.

Sincerely,

Cheryl Ferguson
Client Services
BC Laboratories, Inc.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

B C LABORATORIES
QUALITY CONTROL REPORT - LEVEL I
(Precision & Accuracy)
STANDARD REPORT FOR TCLP

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
TIM TODD

Date of Report: 06/26/97
Sample Matrix: EXTRACT

Samples Affected: 97-03312-1A, 97-03312-1B, 97-03312-1C

Constituents	QC Sample ID	Sample Result	Sample Duplicate	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Sample R.P.D.	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
Cadmium	TCLP-3188-2	< 0.1	< 0.1	2.047	2.085	2.000	2.000	mg/L	<PQL	2.	20	102.	104.	80 - 120
Lead	TCLP-3188-2	< 0.5	< 0.5	19.96	20.29	20.00	20.00	mg/L	<PQL	2.	20	100.	101.	80 - 120

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Bonanno

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

B C LABORATORIES
QUALITY CONTROL REPORT - LEVEL I
(Laboratory Control Sample)
STANDARD REPORT FOR TCLP

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
TIM TODD

Date of Report: 06/26/97
Sample Matrix: EXTRACT

Samples Affected: 97-03312-1A, 97-03312-1B, 97-03312-1C

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
Cadmium	LCSW	0.2018	0.2000	mg/L	101.	80 - 120
Lead	LCSW	1.899	2.	mg/L	95.	80 - 120

Quality Control Officer

Anthony Bonsano

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

TCLP TOXICITY

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 06/17/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1MB

Sample Description: METHOD BLANK ANALYSIS

Sample ID: METHOD BLANK

Constituents	Sample Results mg/liter	Method P.Q.L.	Analytical Method	Maximum Allowable Concentration
Cadmium	None Detected	0.1	SW-6010	1.0
Lead	None Detected	0.5	SW-6010	5.0

Comment: All extract contaminants reported in mg/liter on a filtrate basis. Sample analyzed in accordance with EPA's TCLP 18-hour extraction test.

P.Q.L. = Practical Quantitation Limit (refers to the least amount of analyte quantifiable based on sample size used and analytical technique employed).

REFERENCES:
SW = "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods", EPA-SW-846, September, 1986.

B C LABORATORIES, INC.

Dan Schultz
Laboratory Director

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

B C LABORATORIES
QUALITY CONTROL REPORT
(Precision & Accuracy)
METHOD 8080 PCBS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
TIM TODD

Date of Report: 06/26/97
Sample Matrix: SOLIDS WASTE

Samples Affected: 97-03312-1A, 97-03312-1B, 97-03312-1C

Constituents	QC Sample ID	Sample Result	MS Result	MSD Result	MS Spike Level	MSD Spike Level	Units	Spike R.P.D.	Precision Control Limits	MS % Rec	MSD % Rec	Accuracy Control Limits
PCB-1260	1173-1	< 0.01	0.068	0.067	0.083	0.083	mg/kg	1.	20	82.	81.	74 - 111

MS = Matrix Spike; MSD = Matrix Spike Duplicate; RPD = Relative Percent Difference

Quality Control Officer

Anthony Ronanno

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

B C LABORATORIES
QUALITY CONTROL REPORT
(Laboratory Control Sample)
METHOD 8080 PCBS

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
TIM TODD

Date of Report: 06/26/97
Sample Matrix: SOLIDS WASTE

Samples Affected: 97-03312-1A, 97-03312-1B, 97-03312-1C

Constituents	QC Sample ID	Sample Result	Spike Level	Units	% Rec	Accuracy Control Limits
PCB-1260	LCSS	0.063	0.083	mg/kg	82.	77 - 110

LCSS spike recovery was calculated on the basis of spiking solution.

Quality Control Officer

Anthony Benzano

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

BC LABORATORIES

PCB Analysis
(EPA Method 8080)

SCHNITZER STEEL INDUSTRIES, INC. - IT
P.O. BOX 10047
PORTLAND, OR 97210
Attn: TIM TODD 503-286-6944

Date Reported: 06/17/97
Date Received: 03/31/97
Laboratory No.: 97-03312-1MB

Sample Description: METHOD BLANK ANALYSIS

Sample ID: METHOD BLANK
Sample Matrix: Solid waste

Date Collected:
Date Extracted: 04/08/97
Date Analyzed: 04/11/97

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
PCB-1016	None Detected	mg/kg	0.01
PCB-1221	None Detected	mg/kg	0.01
PCB-1232	None Detected	mg/kg	0.01
PCB-1242	None Detected	mg/kg	0.01
PCB-1248	None Detected	mg/kg	0.01
PCB-1254	None Detected	mg/kg	0.01
PCB-1260	None Detected	mg/kg	0.01
Total PCB's (Summation)	None Detected	mg/kg	0.01

Quality Control Data

Surrogates	% Recovery	Control Limits
Decachlorobiphenyl	102.	60-140

California D.O.H.S. Cert. #1186

for

Stuart G. Buttram
Department Supervisor

cc: GENERAL METALS OF TACOMA, INC. - RICHARD BUSE

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, seperation, detachment or third party interpretation.

4100 Atlas Ct. • Bakersfield, CA 93308 • (805) 327-4911 • FAX (805) 327-1918

Columbia Analytical Services INC.
An Employee-Owned Company

October 21, 1998

Service Request No: K9806898

Tim Todd
Schnitzer Steel Products Company
P.O. Box 10047
Portland, OR 97296-0047

Re: SST

Dear Tim:

Enclosed are the results of the sample(s) submitted to our laboratory on October 5, 1998. For your reference, these analyses have been assigned our service request number K9806898.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Boorse
Project Chemist

HB/sm

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 360/ 577-7222 • Fax 360/636-1068

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9806898
Project:	SST	**Date Collected:**	9/9/98
Sample Matrix:	Solid	**Date Received:**	10/5/98

Total Solids

Prep Method:	NONE	Units:	PERCENT
Analysis Method:	160.3M	Basis:	Wet
Test Notes:			

Sample Name	Lab Code	Date Analyzed	Result	Result Notes
SSTF 9/9-1	K9806898-001	10/6/98	61.6	
SSTF 9/9-2	K9806898-002	10/6/98	68.1	

Approved By: _____ Date: 10/12/98

TSOLIDS.XLT_Sample/01071998a

06898TS.AB1 - 002 10/7/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9806898
Project:	SST	**Date Collected:**	9/9/98
Sample Matrix:	Solid	**Date Received:**	10/5/98
		Date TCLP Performed:	10/14/98
		Date Extracted:	10/15/98

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

			Sample Name:	**SSTF 9/9-1**	**SSTF 9/9-2**	**Method Blank**
			Lab Code:	K9806898-001	K9806898-002	K9806898-MB
			Date Analyzed:	10/16/98	10/16/98	10/16/98
Analyte	**EPA Method**	**MRL**	**Regulatory Limit***			
Cadmium	3010A/6010B	0.01	1	0.30	0.36	ND
Lead	3010A/6010B	0.05	5	2.10	1.25	ND

* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: _____ Date: 10/19/98

TCLP/102194
06898ICP.EA1 - Sample 10/19/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9806898
Project:	SST	**Date Collected:**	9/9/98
Sample Matrix:	Solid	**Date Received:**	10/5/98
		Date Extracted:	10/13/98

Polychlorinated Biphenyls (PCBs)
EPA Methods 3545/8082
Units: mg/Kg (ppm)
Dry Weight Basis

	Sample Name:	**SSTF 9/9-1**	**SSTF 9/9-2**	**Method Blank**
	Lab Code:	K9806898-001	K9806898-002	K981013-MB.
	Date Analyzed:	10/19/98	10/19/98	10/19/98
Analyte	**MRL**			
Aroclor 1016	0.1	ND	ND	ND
Aroclor 1221	0.1	ND	ND	ND
Aroclor 1232	0.1	ND	ND	ND
Aroclor 1242	0.1	7.0	6.6	ND
Aroclor 1248	0.1	ND	ND	ND
Aroclor 1254	0.1	3.2	3.0	ND
Aroclor 1260	0.1	1.3	1.2	ND

Approved By: _____ Date: 10/21/98

3S22MDL/120594
068898SVGJ71 - 1-mb 10/21/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9806898
Project:	SST	**Date Collected:**	9/9/98
Sample Matrix:	Solid	**Date Received:**	10/5/98
		Date TCLP Performed:	10/14/98
		Date Extracted:	10/15/98
		Date Analyzed:	10/16/98

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name: SSTF 9/9-1
Lab Code: K9806898-001

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*
Cadmium	1	0.30	1.22	92
Lead	5	2.10	6.49	88

* Percent recovery information is provided in order to assess the performance of the method on this matrix.

Approved By: _____ Date: 10/19/98

TCLP Metals - Spike 10/19/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Schnitzer Steel Products Co.	**Service Request:**	K9806898
Project:	SST	**Date Collected:**	9/9/98
Sample Matrix:	Solid	**Date Received:**	10/5/98
		Date Extracted:	10/13/98
		Date Analyzed:	10/19/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3545/8082

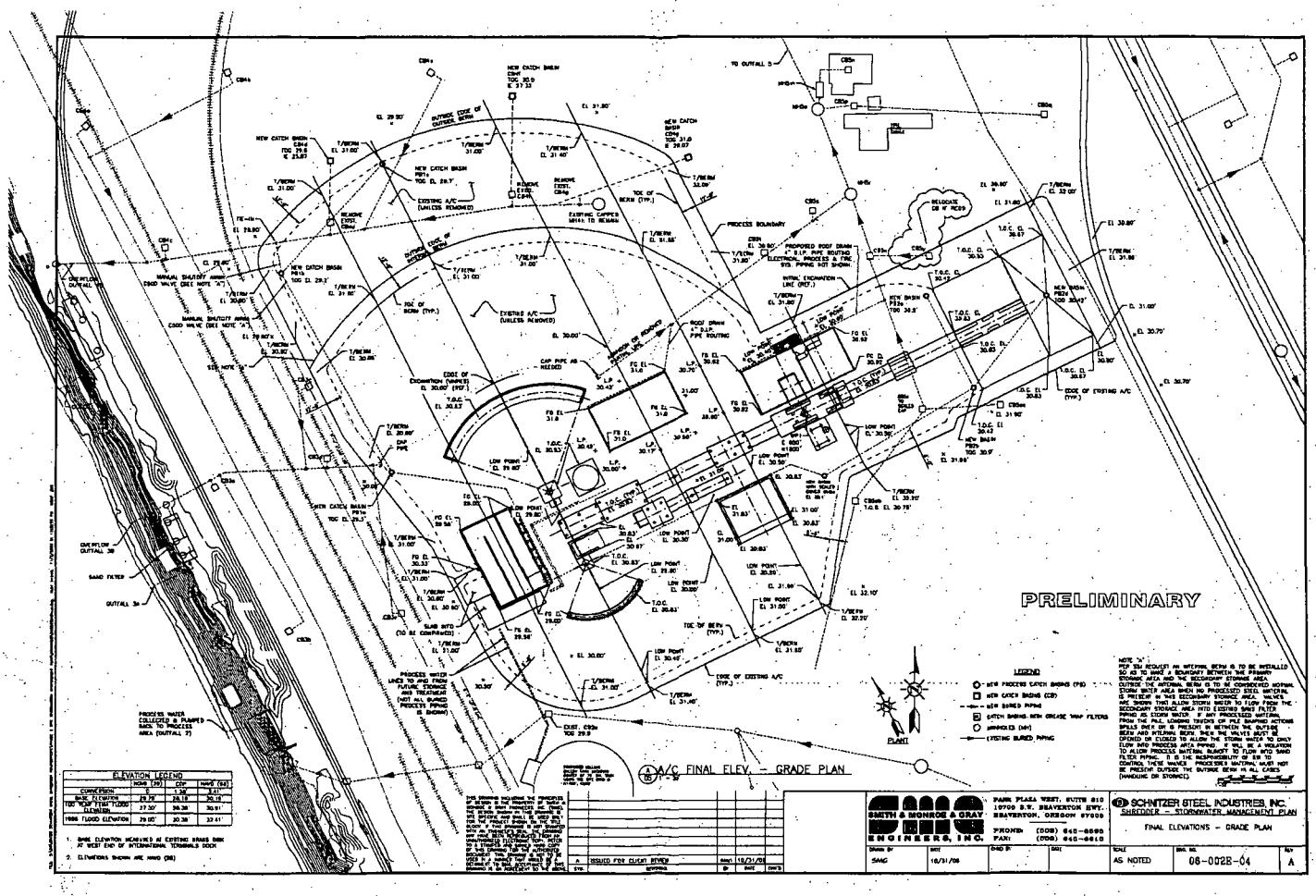
Sample Name	**Lab Code**	**Percent Recovery** Decachlorobiphenyl
SSTF 9/9-1	K9806898-001	123
SSTF 9/9-2	K9806898-002	92
Method Blank	K981013-MB	110

CAS Acceptance Limits: 42-130

Approved By: _____ Date: 10/21/98

SUR1/120594
06898SVG.JJ1 - SUR1 10/21/98

Oversize Document Reduced for Production Purposes.
Full-size Available Upon Request



SCHN00245117

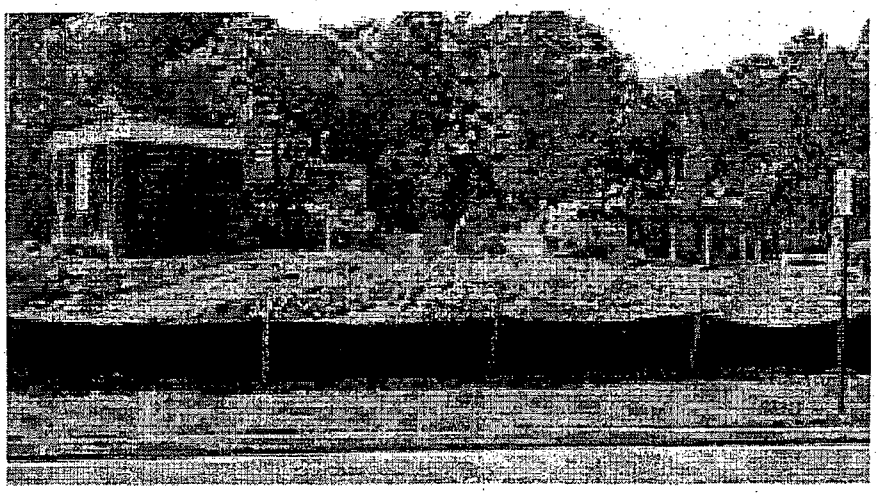
Appendix C: Erosion and Sediment Control Plan Worksheet

This worksheet was developed to assist you in preparing an Erosion and Sediment Control Plan. Correctly completing and submitting this form along with the required site maps, construction plans, and erosion and sediment control installation details to DEQ will meet the NPDES Storm Water Discharge General Permit 1200-C's Erosion and Sediment Control Plan requirement.

Your plan must be submitted to DEQ at least thirty (30) days before starting construction on your project. If DEQ does not comment on your plan within thirty (30) days of receipt of the plan, then your plan will be considered approved by default.

If your local planning agency is administering the NPDES 1200-C permit for DEQ, you must check with that office to determine if additional information is required and the submittal schedule.

If you have any questions please call the DEQ in your DEQ Region or your local agency administering the DEQ's Permit, and ask to speak to available storm water staff.



SCHN00245118

Erosion and Sediment Control Plan Worksheet

Project Name: **Schnitzer Steel Industries Inc. Shredder**

Prepared By: **Linda Harris**

Company Name: **PES Environmental, Inc.**

Telephone: **541-343-2572**

Please answer the following questions as indicated. If needed, additional space is provided for you at the end of this form. You may also attach any information you feel is pertinent to the project.

1. Is your Erosion and Sediment Control Plan for an activity that covers 20 acres or more of disturbed land?

   ☐ YES ☑ NO

   If yes, the plan must be prepared by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society). Please complete question #4.

2. Does your Erosion and Sediment Control Plan require engineered facilities such as settling basins and/or diversion structures?

   ☐ YES ☑ NO

   If yes, the plan must be prepared by an Oregon Registered Professional Engineer.

3. If you answered "YES" to question #1 or 2, please provide the following information and use the space provided to imprint your seal.

   Name:

   Address:

   Telephone:

   Imprint Seal Above

4. Describe the nature of the construction activity:

   Schnitzer Steel is installing a new shredder at 12005 N. Burgard Rd. in Portland, Oregon. The new shredder will replace an existing shredder but will be located on different part of the Schnitzer Steel property.

5. Describe in detail the phases of construction and the erosion control measures to be implemented during each phase. Also complete the table on the next page to assist with the narrative description.

The following project utilizes a number of existing stormwater pollution control facilities on the Schnitzer Steel Industries property. Please see the "ADDITIONAL COMMENTS" Section at the end of this document and the submitted plan sheets for further information on the existing development and pollution controls.

Construction on the new shredder project will occur in 2 general phases. During Phase 1, the main shredder processing areas will be excavated (REF DWG), building pads will be prepared and the foundations will be installed. In Phase 2, the remainder of the project area outside the main processing area will be regraded as necessary to create a hydraulically isolated area around the shredder. Phase 2 will include construction of a berm around the perimeter of the project area and replacement of several catch basins. At the completion of Phases 1 and 2, the project area will be entirely repaved and stabilized with respect to erosion and sediment control. Installation of shredder equipment, buildings, and related process water storage and treatment systems will proceed after the completion of Phases 1 and 2.

During Phase 1, inlet protection will be provided for active inlets within the project area. Sediment generated by construction in Basins 3, 4 and 5 (See sheet 06-002E-03) that enters an existing inlet will be collected in existing onsite sand filter systems. Runoff from the remainder of the project area will be collected and pumped to the existing shredder area (Basin R3), where it will be treated by the existing shredder process water treatment system and reused in the existing shredder. Process water is continuously recycled and is not discharged. The inlet protections, sand filters, stormwater pumping, and existing treatment systems will be inspected daily and maintained as necessary to ensure their proper operation.

During Phase 2, three existing inlets within the new processing area will be replaced by new inlets outside of the processing area. A low asphalt berm will be constructed around the perimeter of the project area to create a new hydraulically isolated area (new drainage basin R5) where operations of the new shredder will occur. Any stockpiling of materials during Phase 1 and 2 construction activities will occur within the area to be bermed.

Prior to starting operations of the new shredder, runoff that collects in the pond excavation or completed pond will be pumped to the existing processing area treatment system in Basin R3. When the new shredder is operational, runoff will be treated in a new process water treatment system and reused in the new shredder. Excess process water and stormwater will be treated as necessary and discharged to the sanitary sewer system under a pretreatment permit that will be obtained from the City of Portland.

It is the applicant's intention to minimize the area disturbed by the proposed project since the existing facility will continue to operate during construction. Installation of new asphalt surfacing throughout the project site is expected to occur prior to October 1 and the expected onset of wet weather.

6. Fill in the year(s) and the month(s) at the top of the chart during which the project will occur, and check the appropriate boxes to indicate when the items in the left column will be performed and/or installed. You may photocopy the chart if your project will last longer than 12 months.

YEAR:	06											
MONTH:	6	7	8	9	10							
CLEARING		✓	✓									
EXCAVATION		✓	✓	✓								
GRADING		✓	✓									
CONSTRUCTION		✓	✓	✓	✓							
EROSION CONTROLS:												
Vegetative Buffer Strips												
Mulching												
Netting/Mats/Blankets												
Temporary Seeding												
Permanent Seeding												
Sod Stabilization												
Other: existing asphalt	✓	✓	✓	✓								
shall remain in place until												
excavation for concrete												
installation occurs.												
SEDIMENT CONTROLS:												
Silt Fencing												
Straw Bales												
Sediment Traps												
Sediment Basins												
Storm Inlet Protection		✓	✓	✓	✓							
Drainage Swales												
Check Dams												
Contour Furrows												
Terracing												
Pipe Slope Drains												
Rock Outlet Protection												
Other: Sediment laden		✓	✓	✓	✓							
water pumped from												
excavation to the existing												
process area in Basin R3												

SCHN00245121

7. Describe the origin and nature of fill material to be used:

Suitable native fill material from excavation areas on-site will be used in fill areas as approved by the project geotechnical engineer. Imported granular material as specified by the geotechnical engineer shall also be used as fill where necessary. Fill material will be specified, compacted, and conditioned per geotechnical engineer's recommendations.

8. Describe the soils present on the site and erosion potential of the soils.

a) Soil type(s):

The site soils are shown as 50A-Urban land with 0 to 3 percent slopes in the USDA Natural Resource Conservation Service soil surveys for Multnomah County. Areas of this map unit are used mainly for commercial purposes. Approximately 90 percent or more of the project area is covered with impermeable surfaces (e.g., buildings, pavement, streets, parking lots, railroads, etc.). These soils have been highly altered during construction. The original soils were silt loam, loam, silty clay loam, and gravelly loam and were commonly overlain by stratified sand and gravel at a depth of 4 to 6 feet. All site soils have been highly compacted through frequent use of heavy equipment.

b) Erosion Potential:

The potential for erosion and transport of sediment off site is considered to be low. The majority of the project site is currently covered by asphalt (~90%) with some smaller areas of degraded asphalt, gravel and highly compacted soils. The site is relatively flat. The Phase 1 excavations for the concrete foundations and for the new process area stormwater collection pond will create low points in the site. Site topography will direct runoff into the project excavations. Water collecting within the excavations will be pumped to the existing process area treatment system in Basin R3. Runoff entering the existing onsite drainage systems within Basins 3, 4, and 5 will be treated through existing sand filter systems prior to discharge to the Willamette River. Runoff entering the drainage system within Basin R3 is pumped back to the process area where it is treated and used by the existing shredder.

9. Submit two copies of site maps and constructions plans. The following checklist is provided for your convenience:

IS THE FOLLOWING INFORMATION PROVIDED AND DETAILED ON THE MAPS SUBMITTED TO THE DEQ?	YES	NO	NOT APP.
a. The complete development, including any phases.	☑	☐	
b. The areas of soil disturbance on the site, including areas that will be cleared, graded or excavated.	☑	☐	
c. The areas of cut and fill.	☐	☐	☑
d. The drainage patterns and slopes of the land both before and after major grading activities.	☑	☐	
e. The location of existing and proposed storm drains and outfalls.	☑	☐	☐
f. The receiving waterbody for drainage from the site.	☑	☐	☐
g. The areas used for storage of soils or wastes.	☑	☐	☐
h. The location of all erosion and sediment control facilities and/or structures.	☑	☐	
i. The areas on the site where vegetative practices will be used.	☐	☐	☑
j. The location of existing and future impervious structures and areas.	☑	☐	☐
k. The location and name of all springs, wetlands, and surface water bodies near the project.	☑	☐	☐
l. The boundaries of the 100 year flood plain if known.	☑	☐	☐
m. The location of graveled access entrance and exit drives and graveled parking areas to be used by construction vehicles.	☑	☐	
n. The locations of graveled roads traveled by more than 25 vehicles per day.	☐	☐	☑
o. Installation details of vegetative and other erosion control practices (vegetative buffer strips, seeding, mulching, erosion blankets, etc.).	☐	☐	☑
p. Installation details of sediment control practices (silt fences, storm drain inlet protection, etc.).	☑	☐	☐

10. Describe the truck drippage precautions you will take to prevent discharge of water from trucks hauling wet soils or stone excavated from the site:

If any saturated soils are hauled off site, either water-tight trucks will be used or loads will be drained on-site using appropriate Best Management Practices (BMPs) until dripping has been reduced to minimize spillage on roadways.

11. Describe the procedures you will use to assure prompt maintenance and repair of graded surfaces and erosion and sediment control measures:

As indicated on the drawings, the construction, maintenance, replacement, and upgrading of the erosion and sediment control measures are the responsibility of the project contractor until all construction is completed and approved. The plans require that the Erosion and Sediment Control Plan (ESCP) facilities be inspected daily by the contractor and maintained as necessary to ensure their continued functioning. In addition, the ESCP facilities are required to be upgraded as needed for unexpected storm events and to ensure that sediment and sediment-laden water do not leave the site. The plans also require that the existing sand filters in Basins 3, 4 and 5 be inspected daily by the contractor and maintained as necessary to ensure their continued functioning.

ADDITIONAL COMMENTS:

The Schnitzer Steel Inc. property at 12005 N. Burgard Rd. in Portland, Oregon is a large developed industrial property containing two large warehouses, three modular office buildings, a break/locker room and two scale houses. A large automobile shredder, including associated magnetic separators and conveyors, is located at the southwest corner of the property, and a hydraulic guillotine shear is located in the north-central portion of the property.

The current project consists of installation of a new shredder in the west central portion of the site to replace the existing one. The existing shredder and other facilities on the property will continue operating during construction of the new shredder.

Schnitzer has installed numerous stormwater pollution control facilities and implemented source controls consistent with the requirements of their NPDES 1200-Z permit and associated Stormwater Pollution Control Plan. Stormwater on the property flows to several different basins on the site. Some basins outlet through pipe systems directly to the Willamette River, which borders the property to the west. Other basins surrounding certain operational areas (existing shredder, shear) collect stormwater for reuse at the existing shredder as process water.

During construction of the new shredder and associated equipment and systems, the general strategy for managing stormwater runoff from within the construction area will be to pump the runoff from the hydraulically isolated construction area to the hydraulically isolated drainage basin surround existing shredder where it will be treated using the existing shredder's treatment system and reused as process water. Since construction is anticipated to occur during the summer and early fall when the existing shredder typically uses considerable more water than falls as precipitation in the surrounding drainage basin, the treatment system will have adequate capacity to manage the runoff from the construction project. By the times the significant fall rains typically occur, the excavation and grading portion of the construction project will be completed and the construction area repaved and the site stabilized with respect to erosion and sediment control issues covered under the 1200-C permit.

Runoff from the construction area after paving is completed but prior to the new shredder being operational will be consistent with the facility's 1200-Z permit. Once the new shredder is operational, stormwater runoff within this hydraulically isolated area, along with process water from the new shredder, will be collected, treated as necessary, and reused in the shredder to the maximum extent possible. Excess stormwater that cannot be stored or reused is planned to be discharged to the sanitary sewer under a pretreatment discharge permit that Schnitzer will be applying for soon. The details of how the water will be collected, stored, treated, reused, and discharged are currently being developed.

ADDITIONAL COMMENTS:

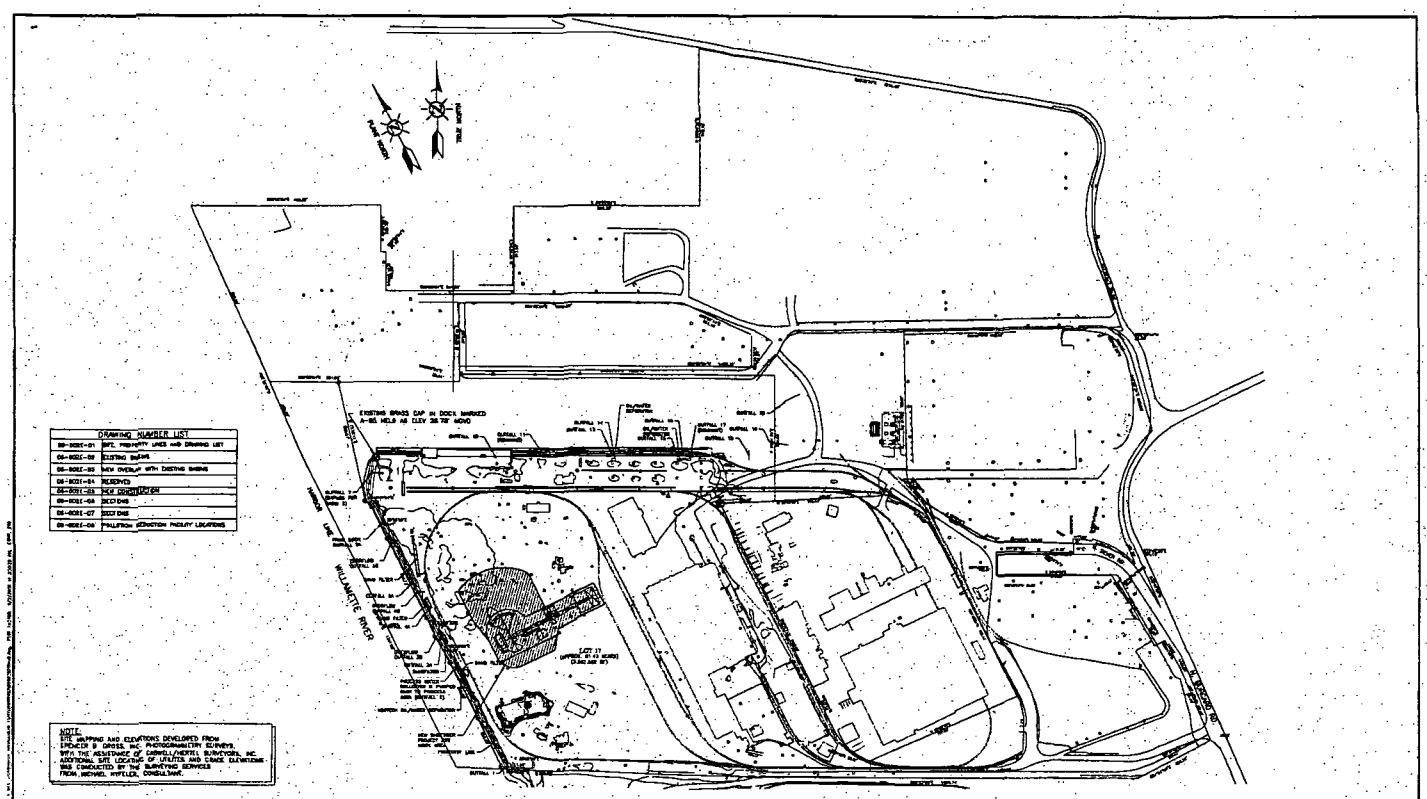
Schedule A, Section 7. e. of the 1200-C permit requires that certain Non-Stormwater Pollution Controls be implmented. Under the facility's 1200-Z permit, Schnitzer has put in place a number of these non-stormwater controls that are sufficient to meet the 1200-C permit requirements including preparation of written spill prevention and response procedures, employee training, regular maintenance schedule for vehicles and machinery, and covered storage areas for some forms of wastes and supplies.

Spill response equipment, including containment and absorbent booms, absorbent socks and pads, and related safety equipment, are maintained on-hand in spill kits placed in strategic locations throughout the site. A comprehensive employee training program has been developed which includes practices and procedures related to stormwater management, pollution prevention, and spill control and countermeasures.

About 80% of the site's catch basins are designed as grease traps (i.e. with an inverted drain pipe). These catch basins are located throughout the site, but are concentrated in areas of storage and operations. Passive oil skimmers (oil absorbent pillows) are placed in all catch basins throughout the operations areas and high traffic areas of the site. They are inspected regularly and replaced as needed.

Small spills or releases of oil or other petroleum products are cleaned up using dry absorbents which are swept up and properly disposed upon completion of clean-up. Soils that may be impacted by small spills are removed and properly disposed. Detergents and solvents are not used to clean up spills.

In areas where bulk material storage is conducted, drain covers may be placed during storage of materials which might contribute to suspended solids in stormwater run-off (e.g., fine particulates or dusty materials). Straw bales, drain filters, or similar mechanisms are currently used to minimize the influx of sediment into stormwater catch basins and into the river, where appropriate.



SITE PLAN WITH PROPERTY LINES

ISSUED FOR PERMIT

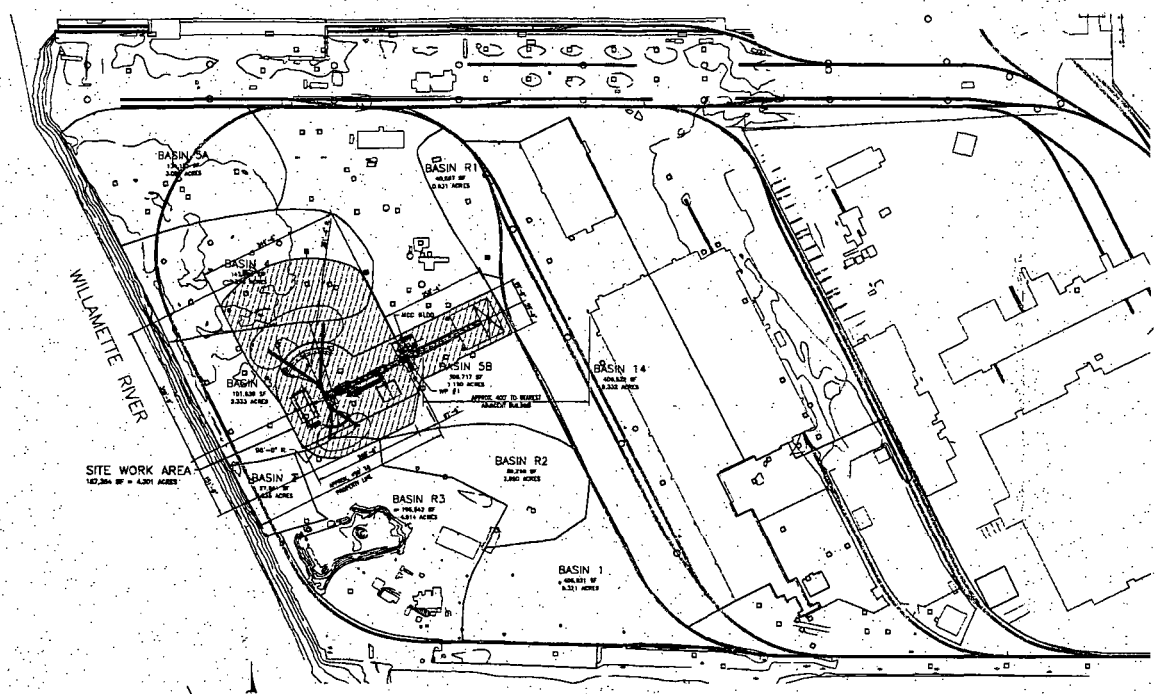
B	ISSUED FOR PERMIT	CAP	3/20/06	RJJ
A	ISSUED FOR CLIENT REVIEW	CAP	3/10/06	

SMITH & MONROE & GRAY ENGINEERS, INC.
RARE PLAZA WEST, SUITE 210
10700 S.W. BEAVERTON-HWY.
BEAVERTON, OREGON 97005
PHONE: (503) 643-8595
FAX: (503) 643-8510

SCHNITZER STEEL INDUSTRIES, INC.
SHREDDER – STORMWATER MANAGEMENT PLAN
SITE PLAN WITH PROPERTY LINES

DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
CAP	3/10/06	PLG	3/23/06	AS NOTED	06-002E-01	B

SCHN00245127



EXISTING STORMWATER BASINS WITH SITEWORK AREA OVERLAY – PLAN

ISSUED FOR PERMIT

B	ISSUED FOR PERMIT	CAP	5/23/08	DLG
A	ISSUED FOR CLIENT REVIEW	CAP	5/19/08	
SYM.	REVISIONS	BY	DATE	CHK'D

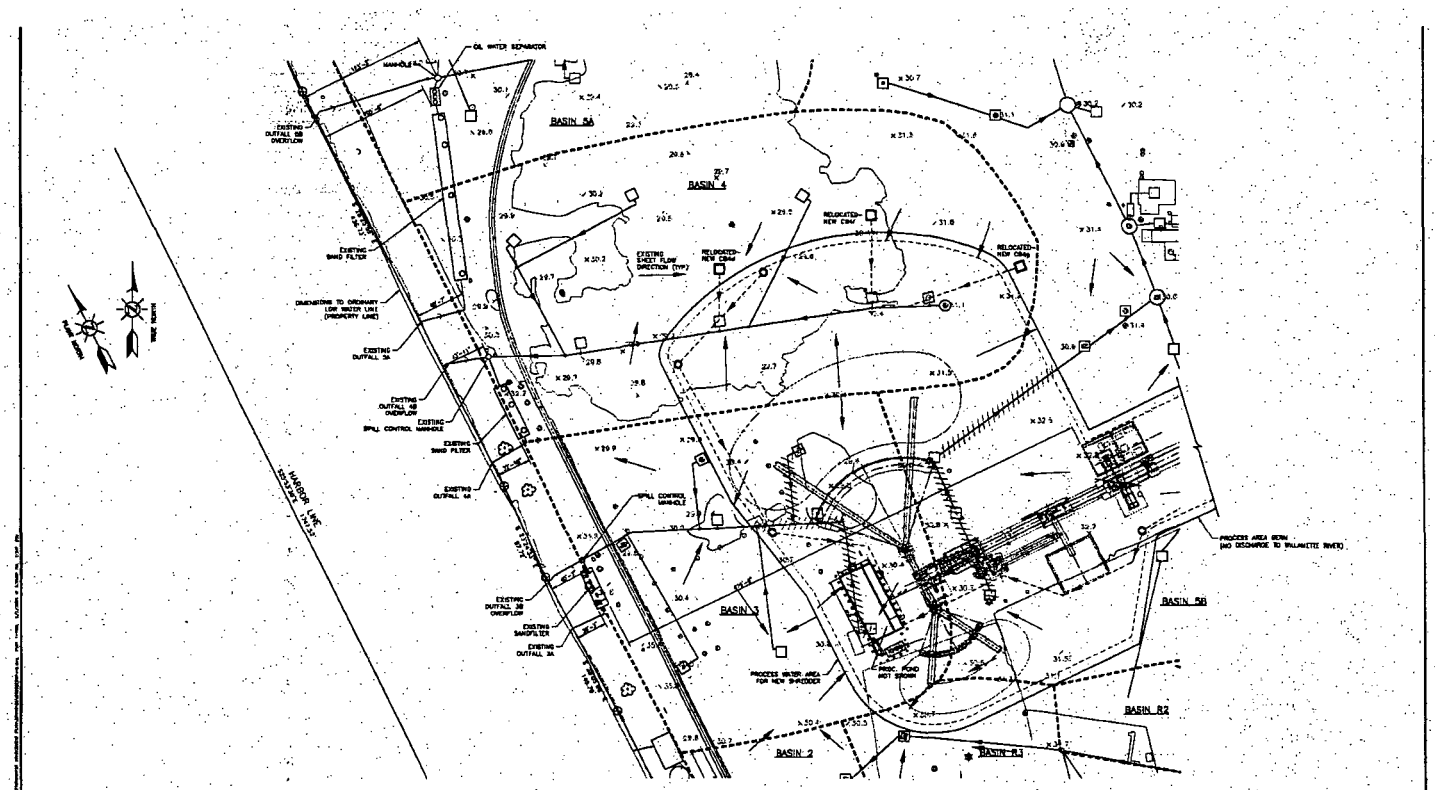
SMITH & MONROE & GRAY ENGINEERS, INC.
PARK PLAZA TRAC. SUITE 110
15700 S.W. BEAVERTON EXT.
BEAVERTON, OREGON 97006
PHONE: (503) 643-9590
FAX: (503) 643-5810

SCHNITZER STEEL INDUSTRIES, INC.
PORTLAND – STORMWATER MANAGEMENT PLAN

EXISTING BASINS WITH NEW SITEWORK AREA OVERLAY

DRAWN BY	DATE	DWG BY	DATE	SCALE	DWG. NO.	REV.
CAP	5/11/08	DLG	5/23/08	AS NOTED	06-002E-03	B

SCHN00245128



ISSUED FOR PERMIT

PLAN (LOCATIONS OF SANDFILTERS & OILWATER SEPARATORS)

ELEVATION LEGEND			
	NGVD (IN)	CCF	NAVD (IN)
CONVERSION	0	+1.38	+1.11
BASE ELEVATION	28.78'	28.78'	29.18'
TOP "NEW FLOW" ELEVATION	27.50'	29.38'	28.91'
100YR FLOOW ELEVATION	29.00'	30.38'	30.41'

1. BASE ELEVATION MEASURED AT EXISTING BRACE BEM 47 WEST SIDE OF INTERNATIONAL TERMINALS DOCK.
2. ELEVATIONS SHOWN ARE NAVD (IN)

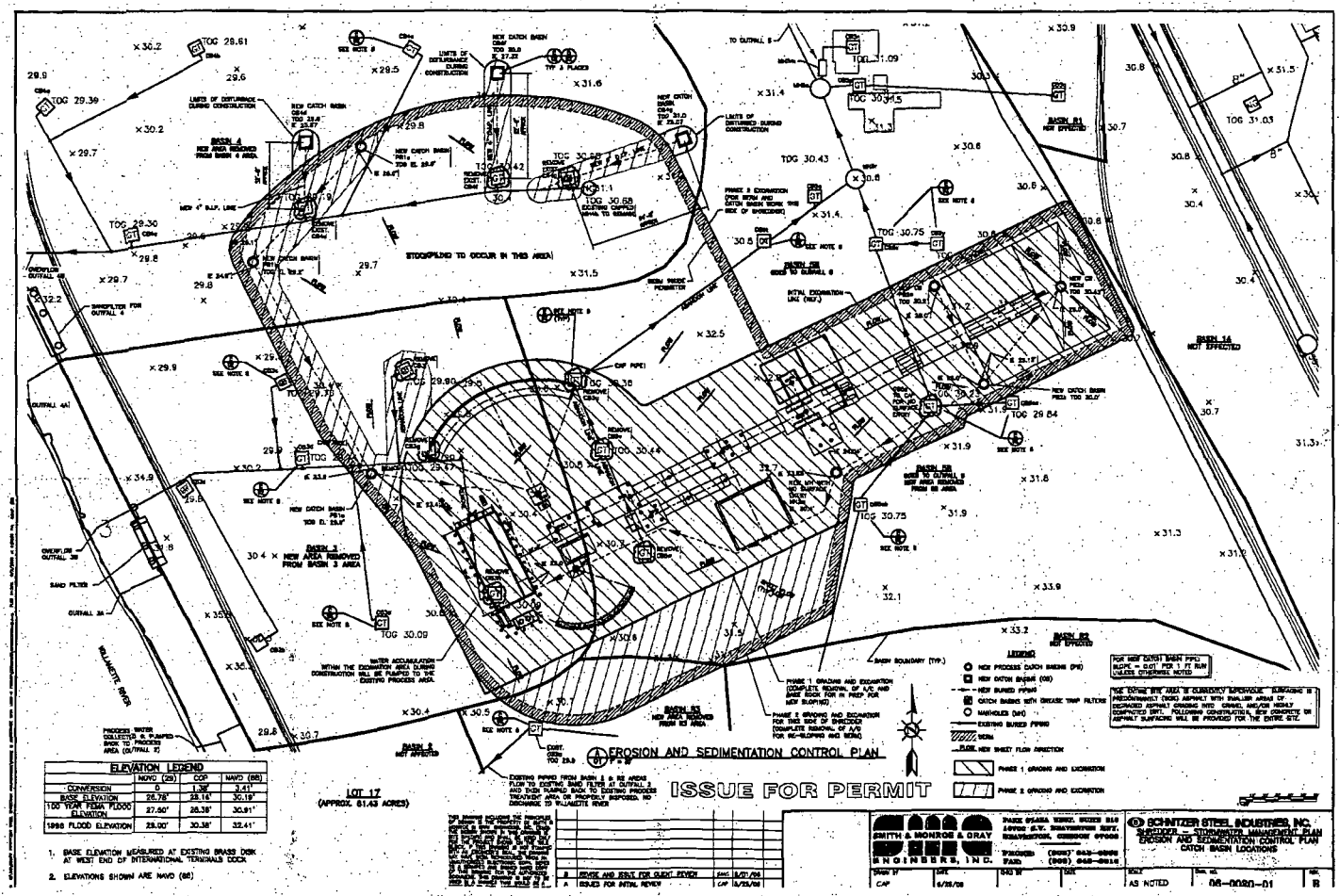
REVISIONS			
B	ISSUED FOR PERMIT	CAP	5/26/08
A	ISSUED FOR CLIENT REVIEW	CAP	5/16/08

SMITH & MONROE & GRAY ENGINEERS, INC.
PARK PLAZA WEST, SUITE 210
10700 S.W. BEAVERTON HWY.
BEAVERTON, OREGON 97005
PHONE: (503) 646-8899
FAX: (503) 646-8610

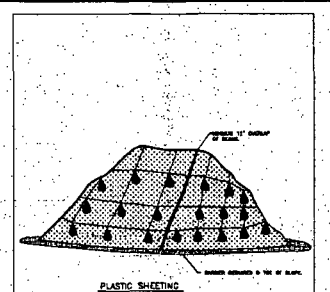
SCHNITZER STEEL INDUSTRIES, INC.
SHREDDER – STORMWATER MANAGEMENT PLAN
EXISTING POLLUTION REDUCTION FACILITY LOCATIONS

Drawn by	Date	Chk'd by	Date	Scale	Dwg. no.	Rev.
CAP	5/17/08	CLD	5/23/08	AS NOTED	08-0022-08	B

SCHN00245129

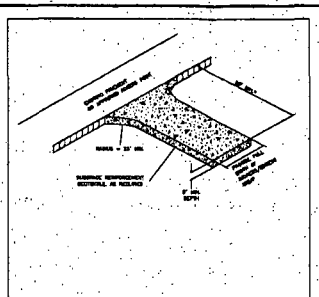


SCHN00245130



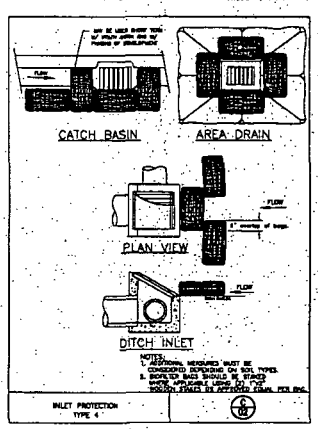
NOTES:
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING WATERMARKED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

PLASTIC SHEETING



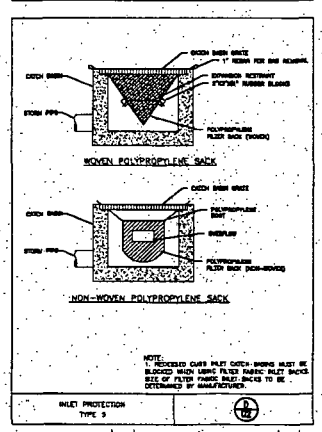
NOTES

CONSTRUCTION ENTRANCE



NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIOFILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING 2x2 THE HOSTON STAKES OR APPROVED EQUAL FOR END.

INLET PROTECTION TYPE 4



NOTE:
1. PROVIDED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

INLET PROTECTION TYPE 3

NOTES FOR EROSION AND SEDIMENT CONTROL PLAN

1. APPROVAL OF THIS EROSION AND SEDIMENT CONTROL PLAN (ESCP) DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF SWALE, PIPES, RESTRICTORS, SWALES, RETENTION FACILITIES, UTILITIES, ETC.)
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
3. THE IMPLEMENTATION OF THIS ESCP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESCP FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED.
4. THE BOUNDARIES OF THE AREA TO BE DISTURBED DURING CONSTRUCTION SHOWN ON THIS PLAN SHALL BE MARKED WITH SPRAY PAINT AND LABELED ON THE EXISTING ASPHALT OR OTHERWISE CLEARLY PLACED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE MARKED/FLAGGED AREA SHALL BE PERMITTED. THE MARKINGS/FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
5. PRIOR TO ANY LAND DISTURBING ACTIVITIES A PRE-CONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, ENGINEER, THE OWNER/PERMITTEE DESIGNATED EROSION AND SEDIMENTATION CONTROL INSPECTOR, AND A REPRESENTATIVE FROM THE LOCAL JURISDICTION.
6. THE ESCP FACILITIES SHOWN ON THIS PLAN SHALL BE CONSTRUCTED IN COALLIANCE WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
7. THE ESCP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESCP FACILITIES MAY BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT LEAVES THE SITE AND ENTERS THE RECEIVING WATERS.
8. PROTECTION SHALL BE PROVIDED FOR ALL ACTIVE STORM DRAIN INLETS THROUGH THE USE OF BIOBAGS OR OTHER APPROVED INLET PROTECTION SYSTEMS. INLET PROTECTION FOR DUAL CURB AND GUTTER SHALL BE PROVIDED FOR ALL INLETS WITHIN THE PROJECT AREA (INCLUDING BUT NOT LIMITED TO THE BURNSIDE STREET EXTENSION AND COLLIANDER). CONSTRUCTION ENTRANCES SHALL BE PROVIDED FOR DUAL, B/GUT WHERE NEEDED.
9. EROSION AND SEDIMENT CONTROL MEASURES MUST REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION, INCLUDING PROTECTION FOR ACTIVE STORM DRAIN INLETS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS.
10. EXISTING PAVED SHALL BE USED TO ACCESS THE CONSTRUCTION SITE. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED IN AREAS TO BE EXCAVATED WHERE NECESSARY TO MINIMIZE TRACKING OF SEDIMENT ONTO EXISTING PAVEMENT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL VEHICLES EXIT CLEAN FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDE BUT ARE NOT LIMITED TO: THE BURNSIDE STREET EXTENSION AND COLLIANDER. CONSTRUCTION ENTRANCES SHALL BE PROVIDED FOR DUAL, B/GUT WHERE NEEDED.
11. WHEN TRUCKING SCRUBBED SOILS FROM THE CONSTRUCTION SITE, EITHER WATER-TIGHT TRUCKS MUST BE USED OR LOADS MUST BE SOAKED ON-SITE AT A DESIGNED LOCATION USING APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) UNTIL DRIPPING HAS BEEN REDUCED TO MINIMIZE SPILLAGE ON ROADWAYS.
12. WATER THAT HAS ACCUMULATED WITHIN THE EXCAVATION AREA DURING CONSTRUCTION WILL BE PUMPED TO THE EXISTING SCHEDULED PROCESS AREA, WHERE IT WILL BE TREATED USING THE EXISTING PROCESS WATER TREATMENT SYSTEM AND RELEASED BY THE EXISTING SCHEDULED OPERATIONS.
13. THE CONTRACTOR SHALL DESIGNATE AN AREA TO MANAGE HAZARDOUS WASTES, USED OILS, FUELS, CONTAMINATED SOILS, CONCRETE WASHOUT, SANITARY WASTE MANAGEMENT, LIQUID WASTE MANAGEMENT, OR OTHER TOXIC SUBSTANCES ENCOUNTERED OR GENERATED DURING CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. IN SOME CASES, DEQ APPROVAL FOR MANAGEMENT AND DISPOSAL MAY BE REQUIRED.
14. STOCKPILED SOIL SHALL BE PLACED IN A STABLE CONFIGURATION WITHIN THE AREAS DESIGNATED ON THIS PLAN. DURING WET WEATHER SEASONS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING (SEE DETAIL A/C02 OR STRAW BALES). SEDIMENT FENCING, BIOFILTERS, OR STRAW BALES ARE REQUIRED AROUND THE PERIMETER OF STOCKPILES.
15. THE ESCP MUST BE KEPT ON SITE AND ALL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT OR SEDIMENT LADEN WATER THAT ENTERS OR IS LIKELY TO ENTER A SURFACE WATER SYSTEM, ROADWAY, OR OTHER PROPERTIES DOES NOT OCCUR.
16. AREAS SUBJECT TO WIND EROSION SHALL TAKE APPROPRIATE MEASURES TO CONTROL DUST INCLUDING THE APPLICATION OF FINE WATER SPRAYING, PLASTIC SHEETING, MULCHING, OR OTHER APPROVED MEASURES.
17. THE ESCP FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
18. DURING BLOW-OFF THE EXISTING SAND FILTERS IN BASINS 3 AND 5 SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING UNTIL CATCH BASINS CB40, CB47, AND CB40 ARE RELOCATED OUTSIDE THE PROJECT AREA.
19. THE ESCP FACILITIES ON INACTIVE AREAS WITHIN THE PROJECT BOUNDARY SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
20. ON ANY SEGMENT PORTION OF THE SITE, IF CONSTRUCTION ACTIVITIES CEASE FOR FIFTEEN (15) DAYS OR MORE, TEMPORARY COVERING WITH STRAW OR SEDIMENT MULCH OR OTHER APPROVED COVERING TO PREVENT DUST OR WIND EROSION MUST OCCUR UNTIL WORK RESUMES.
21. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WHEN PERMANENT EROSION PREVENTION MEASURES ARE IN PLACE.

GENERAL SITE EROSION CONTROL NOTES

A. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL SITE EROSION CONTROL REGULATIONS AND ORDINANCES INCLUDING THE CITY OF PORTLAND'S EROSION CONTROL MANUAL.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE-EROSION CONTROL METHODS, TECHNIQUES, AND SEQUENCING REQUIRED FOR THE CONSTRUCTION.

C. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE TRANSPORT OF SEDIMENT FROM THE SITE.

D. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY SEDIMENT CONTROL INCLUDING SILT FENCES, BIO-FILTER BAGS OR FIBER ROLLS, AND STORM DRAIN INLET PROTECTION.

E. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO STABILIZE SITE ACCESS POINTS.

F. THE CONTRACTOR SHALL PROVIDE AND INSTALL CRUSHED ROCK ENTRANCES TO THE SITE. GUTTER RAINS SHALL BE WOOD CRUSHED ROCK OR DIRT GUTTER RAMPS SHALL NOT BE PERMITTED.

G. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO STABILIZE TEMPORARILY EXPOSED SITE SOILS INCLUDING STOCKPILES BY THE USE OF TEMPORARY GRASSES, MULCH, EROSION BLANKETS, PLASTIC SHEETING OR OTHER SUITABLE MATERIALS AS BEST SUITS THE SITUATION.

H. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT POLLUTANTS, INCLUDING PETROLEUM PRODUCTS AND CONCRETE AND PAINT PREPARATION WASTE, FROM BEING EXPOSED WITH THE STORMWATER SYSTEM INCLUDING DRAINAGE DITCHES.

I. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM ENTERING INTO THE STORMWATER SYSTEM INCLUDING DRAINAGE DITCHES. TEMPORARY INLET PROTECTION SHALL REMAIN IN PLACE UNTIL AFTER FINAL SITE CLEANUP.

J. THE CONTRACTOR SHALL CLEAN STREETS OF ALL SEDIMENT THAT IS TRACKED OFF THE SITE.

ISSUE FOR PERMIT

B	REVISE AND ISSUE FOR CLIENT REVIEW	RMG	5/21/08
A	ISSUED FOR INITIAL REVIEW	CAP	5/20/08

SMITH & MONROE & GRAY ENGINEERS, INC.
PARKS PLAZA TOWER, 00325 SW 107TH S.W. BEAVERTON SUITE. BEAVERTON, OREGON 97005
PHONE: (503) 643-6000
FAX: (503) 643-6010

SCHNITZER STEEL INDUSTRIES, INC.
EROSION AND SEDIMENTATION CONTROL PLAN

DETAILS & NOTES

DRAWN BY	DATE	CHKD BY	DATE	SCALE	DWG. NO.	REV.
CAP	5/20/08			AS NOTED	08-0020-02	B

SCHN00245131

SCHEDULE A
LIMITATIONS AND CONTROLS FOR STORMWATER DISCHARGES

1. **Water Quality Standards**
   a. The permit registrant must not cause a violation of instream water quality standards.
   b. If the permit registrant develops, implements, and revises its ESCP in compliance with Schedule A of this permit, the department assumes that the discharges authorized by this permit will not cause a violation of water quality standards unless the department obtains evidence to the contrary.
   c. In instances were the department determines that the permit registrant's stormwater discharges are causing a violation of water quality standards, the department may take enforcement action for violations of the permit and will require the permit registrant to do one or more of the following:
      i. Develop and implement an Action Plan, which is considered an addendum to the ESCP, describing ESCP modifications that are necessary to prevent and control erosion and sediment discharges to meet water quality standards;
      ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is meeting water quality standards; or
      iii. Curtail stormwater pollutant discharges to the extent possible and submit an individual permit application.

Willamette TMDLs
TEMP, Hg, Bacteria

2. **Water Quality Requirements for TMDL and 303(d) Listed Waterbodies**
   In addition to other applicable requirements of this permit, if sediment or turbid water from a permit registrant's construction project has the potential to discharge into waterbodies that are listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity, the permit registrant must implement one of the two following sets of actions, in accordance with Schedule C.

   a. Option #1: Collect and analyze samples for turbidity in stormwater runoff from the construction site as required by condition B.2. (p. 12) and compare the results to the benchmark value of 160 Nephelometric Turbidity Units (NTUs). The benchmark is used to determine if best management practices are effective; it is not an effluent limit. If any stormwater sample exceeds the benchmark, then the permit registrant must evaluate the best management practices (BMPs) and the adequacy of the ESCP and take corrective actions. If after such actions have been implemented and sample results still exceed the 160 NTU benchmark, the requirements of Option #2 below must be followed, and the permit registrant must submit an Action Plan to the department identifying the selected BMP(s) that will be implemented and the rationale for choosing the selected BMP(s).

   b. Option #2: In addition to the applicable BMPs required by condition A.7., implement one or more of the following BMPs to control and treat sediment and turbidity:
      i. Compost berms, compost blankets, or compost socks;
      ii. Erosion control mats (rolled or blown);
      iii. Tackifiers used in combination with perimeter sediment control BMPs;
      iv. Established vegetated buffers sized at 50 feet plus 25 feet per 5 degrees of slope;
      v. Water treatment by electro-coagulation, chemical flocculation, or filtration; or
      vi. Other substantially equivalent sediment or turbidity BMP approved by the department.

   The selected BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided.

3. **Performance Requirements**

SCHN00245137

a. Prevent Discharge of Significant Amounts of Sediment. The permit registrant must prevent the discharge of significant amounts of sediment to surface waters or conveyance systems leading to surface waters. Significant amounts of sediment result from the actions or inactions of the permit registrant at a site and result in visual indications that sediment has left or is likely to leave the site. The following conditions describe significant amounts of sediment:
   i. Earth slides or mud flows;
   ii. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered or settled to remove sediment;
   iii. Turbid flows of stormwater that are not filtered or settled to remove turbidity;
   iv. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
   v. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity; or
   vi. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity.

b. Corrective Action. If significant amounts of sediment or turbidity (as described in A.3.a above) are visibly detected in: 1) the discharge to a conveyance system leading to surface waters; 2) the discharge to surface waters 50 feet downstream; or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected, the permit registrant must:
   i. Immediately, but no later than 24 hours after initial detection, take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable and to ensure that the requirements of Conditions A.1. and A.3.a. are met.
   ii. Evaluate the ESCP to determine the cause of the discharge.
   iii. Document in the inspection records the corrective actions taken.
   iv. Submit an Action Plan to the department within ten (10) calendar days of the discharge identifying the correction actions taken to cease the discharge, if such actions require a change to the ESCP or a change in the method(s) of implementing the ESCP, (e.g., increased inspection frequency). Approval of the Action Plan by the department prior to implementation of corrective actions is not required. The Action Plan must be kept onsite as per condition B.3., p. 13.

c. Authorized Stormwater Discharges. Subject to compliance with the terms and conditions of this permit, the permit registrant is authorized to discharge the following:
   i. Stormwater associated with construction activity that is authorized by this permit.
   ii. Stormwater from support activities at the construction site (e.g., concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
      (1) The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
      (2) The support activity is not a commercial operation serving multiple unrelated construction projects by different permit registrants, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
      (3) Appropriate controls and measures are identified in an ESCP covering the discharges from the support activity areas.

d. Allowable Non-Stormwater Discharges. This permit authorizes the following non-stormwater discharges to surface water provided they are identified in the ESCP and all necessary controls are implemented to minimize sediment transport:
   i. Discharges from fire-fighting activities;
   ii. Fire hydrant and potable water flushing (refer to department guidance);
   iii. Waters used to wash vehicles where detergents or hot water are not used;
   iv. Potable water including uncontaminated water line flushing;
   v. Routine external building wash down that does not use detergents or hot water;
   vi. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or hot water are not used;
   vii. Uncontaminated air conditioning or compressor condensate;
   viii. Construction dewatering activities;
   ix. Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
   x. Landscape irrigation.

   For other non-stormwater discharges, the permit registrant may ask the department to determine if another permit is needed. The disposal of wastes to surface water or onsite is not authorized by this permit. The permit registrant must submit a separate permit application for such discharges.

4. **Erosion and Sediment Control Plan (ESCP) and Action Plan Preparation and Submittal**
   a. Responsibilities of Permit Registrant. The permit registrant must ensure that an ESCP is prepared and revised as necessary for the construction activity regulated by this permit and submitted to the department or Agent as required by this permit.

   b. Qualifications to Prepare ESCP.
      i. For construction activities disturbing 20 or more acres, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society).
      ii. If engineered facilities such as sedimentation basins or diversion structures for erosion and sediment control are required, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer.

   c. Submittal of ESCP and if Required, Action Plans.
      i. The permit registrant must submit the ESCP to the department or Agent prior to obtaining registration under this permit (see Permit Registration, Condition 2 of this permit, p. 2).
      ii. If ESCP revisions are made after permit registration is approved, the permit registrant must submit revisions to the ESCP in the form of an Action Plan to the department, or if corrective actions are required by A.3.b., p. 4, within 24 hours of initial detection of the stormwater discharge.
         (1) The Action Plan is considered an addendum to the ESCP.
         (2) Approval of the Action Plan by the department prior to implementation of corrective actions is not required.
         (3) An Action Plan may be required due to changes in the project design, local conditions, project schedule (e.g., schedule delays postpone earthwork to wet weather season so additional controls are needed), weather conditions or other appropriate reasons.
         (4) The Action Plan must clearly identify any necessary changes (such as type or design) to the BMPs identified in the ESCP, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.

iii. If the permit registrant does not receive a response on the Action Plan from the department or Agent within ten (10) days of the Action Plan receipt, the proposed revisions are deemed approved.

iv. The department or Agent may require the permit registrant to submit an Action Plan at any time if the ESCP is inadequate to prevent the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters. The permit registrant must submit the Action Plan according to the timeframe specified by the department or Agent.

5. **ESCP Implementation**

a. The permit registrant must ensure that the ESCP is implemented for the construction activity regulated by this permit. Failure to implement any portion of the ESCP constitutes violation of the permit on the part of the permit registrant.

b. The permit registrant must ensure that the ESCP is implemented according to the following sequence:

i. Before Construction.

(1) Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved.

(2) Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas.

(3) Hold a pre-construction meeting of project construction personnel that includes the inspector required by condition A.6.b. to discuss of erosion and sediment control measures and construction limits.

ii. During and After Construction.

(1) Site Access Areas (construction entrances, roadways equipment parking areas).
Stabilize site entrances and access roads prior to earthwork.

(2) Install Sediment Control Measures.
Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers which must be in place before vegetation is disturbed.

(3) Non-Stormwater Pollution Control Measures.
Concurrent with establishing construction access controls and sediment controls, the permit registrant must establish material and waste storage areas, concrete truck and other concrete equipment washout areas and other non-stormwater controls prior to the start of construction activities.

(4) Runoff Control.
Stabilize stream banks and construct the primary runoff control measures to protect areas from concentrated flows.

(5) Land Clearing, Grading and Roadways.

(a) Begin land clearing, excavation, trenching, cutting or grading after installing applicable sediment and runoff control measures.

(b) Provide appropriate erosion and sediment control BMPs for all roadways including gravel roadways.

(c) Install additional control measures as work progresses as needed.

(6) Surface Stabilization (temporary and permanent seeding, mulching).
Apply temporary or permanent soil stabilization measures immediately on all disturbed areas as grading progresses.

(7) Construction and Paving (install utilities, buildings, paving, etc.).
Erosion and sediment control measures must remain in place for the duration of construction, including protection for active storm drain inlets and appropriate non-stormwater pollution controls.

(8) Final Stabilization and Landscaping.

SCHN00245140

Provide permanent erosion prevention measures on all exposed areas and remove all temporary control measures as areas are stabilized.

6. ESCP Elements

The permit registrant must ensure that the ESCP contains the following elements:

a. Local Government Requirements. Include any procedures necessary to meet applicable local government erosion and sediment control or stormwater management requirements.

b. Inspections.
   i. Inspections must be conducted by a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality, is knowledgeable in the correct installation of the erosion and sediment controls, and is able to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.
   ii. Identify the person(s) or title and experience of the personnel that will conduct inspections. Provide the following for each person:
      (1) Name;
      (2) Contact phone number and, if available, e-mail address; and
      (3) Description of experience and training.

c. Narrative Site Description.
   i. Nature of the construction activity, including a proposed timetable for major activities;
   ii. Estimates of the total area of the permitted site and the area of the site that is expected to undergo clearing, grading or excavation;
   iii. Nature of the fill material to be used, the insitu soils, and the erosion potential of such soils; and
   iv. Names of the receiving water(s) for stormwater runoff.

d. Site Map.
   i. The site map kept on site must represent the actual BMP controls being used onsite, particularly those BMPs identified in the most recent Action Plan(s);
   ii. The site map must show sufficient roads and features for the department or Agent to locate and access the site;
   iii. Total property boundary including surface area of the development;
   iv. Areas of total soil disturbance (including, but not limited to, showing cut and fill areas and pre and post development elevation contours);
   v. Drainage patterns before and after finish grading;
   vi. Location(s), size, and type of discharge point(s);
   vii. Areas used for the storage of soils or wastes;
   viii. Areas where vegetative practices are to be implemented;
   ix. Location of all erosion and sediment control measures or structures;
   x. Location of impervious structures after construction is completed. Include buildings, roads, parking lots, outdoor storage areas, etc., if any;
   xi. Springs, wetlands and other surface waters located on-site;
   xii. Boundaries of 100-year floodplains if determined and easily available;
   xiii. Location of stormwater discharge points to receiving water(s) or stormwater conveyance systems if applicable;

xiv. Location of storm drain catch basins and the location of catch basins with inlet protection, if applicable and a description of the type of catch basins used (e.g., curb inlet, field inlet, grated drain, combination, etc.);
xv. Location of septic drain fields if applicable;
xvi. Location of existing or proposed drywells or other UICs if applicable;
xvii. Location of drinking water wells;
xviii. Details of sediment and erosion controls including installation techniques; and
xix. Details of detention ponds, storm drain piping, inflow and outflow details.

e. Implementation Schedule and Description of BMPs
Include in the ESCP the implementation schedule and description of BMPs to be used at the site. See Condition A.5. for implementation requirements and conditions A.7. and A.8. for minimum BMP requirements.

7. **Required BMPs**
The following controls and practices, if appropriate for the site, are required in the ESCP and must be implemented according to the schedule in the ESCP. If the permit registrant determines that any of these controls or practices is not appropriate, the rationale for the change must be provided in the ESCP.

a. Wet Weather BMPs.
i. Generally construction activities must avoid or minimize excavation and bare ground activities that occur on slopes greater than five (5) percent during the period of October 1 through May 31.
ii. Temporary stabilization of soils must be installed at the end of the shift before a holiday or weekend if needed based on weather forecast.

b. Runoff Controls.
In developing runoff control practices, at a minimum the following BMPs must be considered: slope drains, energy dissipaters, diversion of run-on, temporary diversion dikes, grass-lined channel (turf reinforcement mats), trench drains, drop inlets, and check dams.

c. Erosion Prevention Methods.
In developing erosion prevention methods, at a minimum the following BMPs must be considered:
i. Clearing and Grading Practices.
(1) Provide structural erosion prevention during grading and earthwork-surface roughening and prevent erosion on graded surfaces.
(2) Top-soiling, temporary seeding and planting, permanent seeding and planting, mycorrhizae/ biofertilizers, mulches, compost blankets, erosion control blankets and mats, soil binders, soil tackifiers, sodding vegetative buffer strips, and protection of trees with protective construction fences.
ii. Wind Erosion/Dust Control.
(1) All erosion and sediment controls not in the direct path of work must be installed before any land disturbance.
(2) Whenever practicable, clearing and grading must be done in a phased manner to prevent exposed inactive areas from becoming a source of erosion.
iii. Vegetative Erosion Control Practices.
(1) Preserve existing vegetation and re-vegetate open areas when practicable before and after grading or construction.

SCHN00245142

(2) Biotechnical erosion control measures: live staking, live fascines and brush wattles, stabilization mats, pole planting, brush box, fascines with sub-drains, live pole drains, and brush packing or live gully fill repair.
(3) All temporary sediment control practices must not be removed until permanent vegetation or other cover of exposed areas is established.
(4) If vegetative seed mix is used, identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover).

d. Sediment Controls.
i. Peripheral Erosion and Sediment Controls.
(1) Sediment control must be provided along the site perimeter and at all operational internal storm drain inlets at all times during construction.
(2) Active inlets must be considered part of the site perimeter because they provide an avenue for sediment and other pollutants to leave the site.
ii. Erosion Control Practices.
In developing sediment control practices, include in the ESCP installation details and at a minimum the following must be considered: sediment fences, sand bag barrier, gravel bag berm, earth dikes, drainage swales, check dams, subsurface drains which daylight to the surface, pipe slope drains, rock outlet protection, sediment traps, rock and brush filters, compost berm/compost sock, fiber rolls/wattles, storm drain inlet protection, and temporary or permanent sedimentation basins.
iii. Reducing Sediment Tracking.
(1) Prior to any land disturbing activities each site must have graveled, paved, or constructed entrances, exits and parking areas with exit tire wash to reduce the tracking of sediment onto public or private roads.
(2) All unpaved roads located onsite must be graveled. Other effective erosion and sediment control measures either on the road or down gradient may be used in place of graveling.
(3) When trucking saturated soils from the site, either water-tight trucks must be used or loads must be drained on-site until dripping has been reduced to minimize spillage on roads.

e. Non-Stormwater Pollution Controls.
Non-Stormwater Pollution Controls BMPs must be in-place throughout the grading and construction phases. In developing non-stormwater pollution control practices, at a minimum the following must be considered:
i. Pollution Prevention.
(1) BMPs used to prevent pollution of stormwater or to treat stormwater from the following activities: dewatering and ponded water management, paving operation controls, temporary equipment bridge, illicit connection, and illegal discharge.
(2) BMPs that will be used to prevent or minimize stormwater from being exposed to pollutants from spills, no discharge of concrete truck wash water, vehicle and equipment cleaning, vehicle and equipment fueling, maintenance, and storage, other cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations.
ii. Stockpile Erosion and Sediment Control Practices.
(1) Stockpiles located away from the construction activity but still under the control of the permit registrant must also be protected to prevent significant amounts of sediment or turbid water from discharging to surface waters.
(2) At the end of each workday the soil stockpiles must be stabilized, covered or other BMPs must be implemented to prevent discharges to surface waters.

(3) In developing these practices, at a minimum the following must be considered: diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of sediment fences around stockpiles

iii. Solid Waste and Hazardous Materials Management.

(1) The department encourages the permit registrant to reuse and recycle construction wastes.

(2) Any use of toxic or other hazardous materials must include proper storage, application, and disposal.

(3) In developing these practices, at a minimum the following must be described in the ESCP and implemented where practical: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures; regular maintenance schedule for vehicles and machinery; and material delivery and storage controls, training and signage, material use, covered storage areas for waste and supplies.

(4) The permit registrant must manage hazardous wastes, used oils, contaminated soils, concrete management, sanitary waste management, liquid waste management, or other toxic substances discovered or generated during construction activities in accordance with state and federal regulations. In some cases, department approval for management and disposal may be required.

f. Inspection and Maintenance.

To provide for continued performance, BMPs must be inspected before, during, and after significant storm events. During grading and construction, the permit registrant is responsible for maintaining the stormwater pollution control BMPs. The permit registrant must establish and promptly implement procedures for maintenance and repair of erosion and sediment control measures.

i. General Site Maintenance.

(1) Significant amounts of sediment that leave the site must be cleaned up within 24 hours and placed back on the site and stabilized or disposed of properly. In addition, the source(s) of the sediment must be controlled to prevent continued discharge within 24 hours. Any instream clean up of sediment must be preformed according to requirements and timelines set by the Oregon Department of State Lands.

(2) Sediment must not be intentionally washed into storm sewers or drainage ways. Vacuuming or dry sweeping must be used to clean up released sediments.

(3) If fertilizers are used to establish vegetation, the application rates must follow manufacturer's guidelines and the application must be done in such a way to minimize nutrients discharging to surface waters.

ii. Maintenance of Erosion and Sediment Controls.

(1) For a sediment fence, the trapped sediment must be removed before it reaches one third of the above ground fence height.

(2) Other sediment barriers (e.g., biobags): the sediment must be removed before it reaches two inches of accumulation in any area above the sediment barrier(s).

(3) For catch basin protection, cleaning must occur when sediment retention capacity has been reduced by fifty percent.

(4) For a sediment basin, removal of trapped sediments must occur when design capacity has been reduced by fifty percent.

iii. Stormwater Treatment System Requirement.

If a stormwater treatment system (e.g., electro-coagulation, chemical flocculation, filtration, etc.) for sediment removal is employed, an operation and maintenance plan must be submitted to the department for approval before start up of the treatment system. Upon department approval of the plan, the permit registrant must implement the plan.

8. Additional BMP Requirements During Inactive Periods

a. If all construction activities cease at the site for thirty (30) days or more, the entire site must be stabilized using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.

b. On any significant portion of the site, if construction activities cease for fifteen (15) days or more, temporary covering with straw or compost mulch or other covering that is tackified to prevent soil or wind erosion must occur until work resumes.

SCHEDULE B
MINIMUM MONITORING REQUIREMENTS

1. **Visual Monitoring Requirement**
   a. The following must be inspected by the permit registrant:
      i. All areas of the site disturbed by construction activity to ensure that BMPs are in working order.
      ii. Discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.
      iii. BMPs identified in the ESCP and any ESCP revisions documented in Action Plan(s) to assess whether they are functioning properly.
      iv. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
      v. Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.

   b. All ESCP controls and practices must be inspected visually according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snow melt, is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than seven (7) consecutive calendar days	Once every two (2) weeks.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.

2. **Turbidity Monitoring Requirements for TMDL and 303(d) Listed Waterbodies per Option #1 in Condition A.2.a., p. 3.**
   In addition to the requirements in condition B.1. above, permit registrants discharging into waterbodies that are listed for turbidity or sedimentation on the most recently EPA approved Oregon 303(d) list or have an established TMDL for sedimentation or turbidity are subject to the following requirements if Option #1 (condition A.2.a..) is being followed:

Parameter	Minimum Frequency	Monitoring Points	Type of Sample	Test Method[2]
Turbidity (NTU)	At a minimum one stormwater sample that represents the flow and characteristics of the stormwater discharge must be collected at each monitoring point on a weekly basis when stormwater runoff is detectable.	All stormwater discharge points indicated on the site map see A.6.d.xiii., p. 7.	Grab	Field turbidimeter

[1] Occurring during regular working hours at the construction site.
[2] The permit registrant must use sampling procedures, testing methods and turbidity meter calibration methods approved by the department.

SCHN00245146

3. Recordkeeping Requirements Prepare checklist

a. Documentation of Visual Inspection. All visual inspections must be documented in writing as follows:
   i. Inspection date and inspector's name.
   ii. At the designated discharge location(s) inspections of the quality of the discharge for any turbidity, color, sheen, or floating materials.
      (1) Inspect and record color and turbidity or clarity in: 1) the discharge to a conveyance system leading to surface waters, 2) the discharge to surface waters 50 feet downstream, or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected.
      (2) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters. For a sheen or floating material, describe whether this is present or absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
   iii. If a site is inaccessible due to inclement weather, record the inspections noted at a relevant discharge point or downstream location if practical.
   iv. Location(s) of BMPs that need to be maintained, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and non-stormwater pollution (e.g., paints, oils, fuels, adhesives) controls.
   v. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
   vi. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
   vii. Corrective action required and implementation dates.

b. ESCP including Action Plan(s) Retained Onsite. A copy of the ESCP and the Action Plan must be retained on-site and made available on request to the department, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the ESCP must be retained by the permit registrant but does not need to be at the construction site.

c. Inspection and Monitoring Results. All inspection records and monitoring results must be kept on-site and maintained by the permit registrant, made available to the department, Agent, or local municipality upon request, and must include:
   i. The construction site name as it appears on the registrant's permit and the file or site number.
   ii. All Action Plans that describe reasons for required changes or modifications to the ESCP and/or other corrective measures implemented during the previous reporting period.
   iii. Turbidity sampling results required by Condition B.2., p. 12 if applicable.

d. Retention of Inspection and Monitoring Results for Three (3) Years:
   i. All inspection records and monitoring results must be retained for at least three (3) years after project completion.
   ii. In addition, these records must be delivered or made available to the department within three (3) working days of request.

SCHEDULE C
COMPLIANCE SCHEDULE

Potential discharges into waterbodies that are on the most recent EPA-approved Oregon 303(d) list for turbidity or sedimentation or have a TMDL for turbidity or sedimentation

1. **Permit registrants who obtained permit coverage prior to October 1, 2006 must:**
   a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements in Condition A.2. by October 1, 2006.
   b. For future TMDLS or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

2. **Permit registrants obtaining coverage after October 1, 2006 must:**
   a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements of Condition A.2. upon obtaining coverage under the permit. If Option #2 is selected, the BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit and the rationale for choosing the selected BMP(s) must also be provided.
   b. For future TMDLS or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

SCHEDULE D
SPECIAL CONDITIONS

1. In the event of any inconsistency between Schedules A through D and F, Schedules A through D will apply.

2. Registration under this permit does not relieve the permit registrant from all other permitting and licensing requirements. Prior to beginning construction activities, the permit registrant must obtain all other necessary approvals.

3. **Required Actions Prior to Termination of Permit Registration**
   a. The following conditions must be met before permit registration is terminated:
      i. There is no reasonable potential for discharge of a significant amount of construction related sediment or turbidity to surface waters.
      ii. Construction materials, waste, and temporary erosion and sediment controls have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls.
      iii. All soil disturbance activities by the permittee have been completed and all stormwater discharges from construction activities that are authorized by this permit are eliminated.
      iv. All temporary erosion and sediment controls have been removed and properly disposed.
      v. All disturbed or exposed areas of the site must be fully stabilized as defined in Condition D.4 m. below.

   b. The permit registrant must complete and submit a Notice of Termination form to the department or Agent after the conditions in D.3.a. above have been satisfied. The department or Agent will not act on a request for termination until all outstanding compliance issues are resolved.

4. **Permit-specific Definitions**
   a. *Action Plan* means an addendum to the ESCP that describes ESCP modifications.
   b. *Agent* means a governmental entity that has an agreement with the department to assist with implementation of this general permit.
   c. *Best Management Practices or BMPs* means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.
   d. *Borrow Area* means the area from which material is excavated to be used as fill material in another area.
   e. *Clean Water Act or CWA* means the Federal Water Pollution Control Act (FWPCA) enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.
   f. *Department or DEQ* means the Oregon Department of Environmental Quality.
   g. *Detention* means the temporary storage of stormwater to improve quality or reduce the volumetric flow rate of discharge or both.
   h. *Dewatering* means the removal and disposal of surface water or groundwater for purposes of preparing a site for construction.
   i. *Discharge Point* means the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.
   j. *Erosion* means the movement of soil particles or rock fragments by water or wind.
   k. *Erosion and Sediment Control BMPs* means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering,

SCHN00245149

filter fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

l. *Erosion Prevention Methods* means a wide range of erosion prevention practices, materials and methods to be applied during earthwork activities including structural methods, techniques to prevent erosion on already graded surfaces, and biotechnical erosion control methods. The best way to control the discharge of sediment and related pollutants from a construction site is to prevent erosion from occurring in the first place.

m. *Final Stabilization or Fully Stabilized* means the completion of all soil disturbing activities at the site by the permit registrant, and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) to prevent erosion.

n. *Hazardous Materials* means the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.

o. *Local Government* means any county, city, town, or service district.

p. *National Pollutant Discharge Elimination System or NPDES* means the national program under Section 402 of the Federal Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.

q. *Non-Stormwater Pollution Controls* means general site and materials management measures that directly or indirectly aid in minimizing the discharge of sediment and other construction related pollutants from the construction site.

r. *Permit Registrant* means the owner or operator of the construction activity regulated by this permit who receives notice of registration under this general permit. Owners or operators may be individuals or other legal entities.

s. *Pollutant* as defined in 40 CFR §122.2 means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

t. *Pollution or Water Pollution* as defined by ORS 468B.005(3) means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

u. *Runoff Controls* means BMPs that are designed to control the peak volume and flow rate and to prevent scour due to concentrated flows.

v. *Sediment* means solid unconsolidated rock and mineral fragments that come from the weathering of rocks and are transported by water, air, or ice and form layers on the Earth's surface. Sediments can also result from chemical precipitation or secretion by organisms.

w. *Site* means the area where the construction activity is physically located or conducted.

x. *Source Control BMPs* means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

y. *Stormwater Conveyance* means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.

z. *Stormwater as defined by 40 CFR §122.26(b)(13)* means stormwater runoff, snow melt runoff, and surface runoff and drainage.

aa. *Surface Runoff* means that portion of stormwater that does not infiltrate into the ground or evaporates, but instead flows onto adjacent land or watercourses or is routed to stormwater conveyance systems.

bb. *Surface Water* means all water naturally open to the atmosphere (e.g., rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.).

cc. *Total Daily Maximum Load or TMDL* means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by the department to the various pollutant sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

dd. *Turbidity* means the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.

ee. *Underground Injection Control or UIC* means any system, structure, or activity that is created to place fluid below the ground or sub-surface (e.g., sumps, infiltration galleries, drywells, trench drains, drill holes, etc.)

ff. *Water or Waters of the State as defined by ORS 468B.005(8)* means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

SCHN00245151

SCHEDULE F
NPDES GENERAL CONDITIONS

SECTION A. STANDARD CONDITIONS

1. Duty to Comply
   The permit registrant must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Oregon Revised Statutes (ORS) 468B.025, and 40 Code of Federal Regulations (CFR) §122.41(a), and is grounds for enforcement action; for permit termination, revocation or reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Water Pollution and Permit Condition Violations
   ORS 468.140 allows the department to impose civil penalties up to $10,000 per day for violation of a term, condition, or requirement of a permit. Additionally 40 CFR §122.41 (A) provides that any person who violates any permit condition, term, or requirement may be subject to a federal civil penalty not to exceed $25,000 per day for each violation.

   Under ORS 468.943 and 40 CFR §122.41(a), unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to $25,000 imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

   Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a Class B felony punishable by a fine not to exceed $200,000 and up to 10 years in prison. Additionally, under 40 CFR §122.41(a) any person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a federal civil penalty not to exceed $100,000, and up to 6 years in prison.

3. Duty to Mitigate
   The permit registrant must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the department, the permit registrant must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

4. Duty to Reapply
   If the permit registrant wishes to continue an activity regulated by this permit after the expiration date of this permit, the permit registrant must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit. The department may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions
   This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:
   a. Violation of any term, condition, or requirement of this permit, a rule, or a statute
   b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts
   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge
   d. The permit registrant is identified as a Designated Management Agency or allocated a wasteload under a Total Maximum Daily Load (TMDL)
   e. New information or regulations
   f. Modification of compliance schedules
   g. Requirements of permit re-opener conditions
   h. Correction of technical mistakes made in determining permit conditions
   i. Determination that the permitted activity endangers human health or the environment
   j. Other causes as specified in 40 CFR §§122.62, 122.64, and 124.5

The filing of a request by the permit registrant for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Toxic Pollutants
The permit registrant must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights
The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to persons of property or invasion of any other private rights, nor any infringement of federal, tribal, state, or local laws or regulations.

8. Permit References
Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act and OAR 340-041-0033for toxic pollutants, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

9. Permit Fees
The permit registrant must pay the fees required by OAR 340-045-0070 to 0075.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance
The permit registrant must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permit registrant to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permit registrant only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Duty to Halt or Reduce Activity
For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permit registrant must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permit registrant in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities
   a. Definitions
      (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation or the diversion is due to nonuse of nonessential treatment units or processes at the treatment facility.
      (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

   b. Prohibition of bypass.
      (1) Bypass is prohibited unless:
         (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
         (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of

reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The permit registrant submitted notices and requests as required under General Condition B.3.c.

(2) The department may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the department determines that it will meet the three conditions listed above in General Condition B.3.b.(1).

c. Notice and request for bypass.

(1) Anticipated bypass. If the permit registrant knows in advance of the need for a bypass, a written notice must be submitted to the department at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permit registrant must submit notice of an unanticipated bypass as required in General Condition D.5.

4. Upset

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permit registrant. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B.4.c are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance is not final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permit registrant who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permit registrant can identify the causes(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permit registrant submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and

(4) The permit registrant complied with any remedial measures required under General Condition A.3 hereof.

d. Burden of proof. In any enforcement proceeding, the permit registrant seeking to establish the occurrence of an upset has the burden of proof.

5. Treatment of Single Operational Upset

For purposes of this permit, A Single Operational Upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

6. Overflows from Stormwater Conveyance Systems (privately owned)

a. Definitions

(1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system through a designed overflow device or structure, other than discharges to the wastewater treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system which causes it to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.

(3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure.

b. Prohibition of overflows. Overflows are prohibited unless:
   (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
   (2) There were no feasible alternatives to the overflows, such as the use of auxiliary conveyance systems, or maximization of conveyance system storage; and
   (3) The overflows are the result of an upset as defined in General Condition B.4 and meeting all requirements of this condition.

c. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.

d. Reporting required. Unless otherwise specified in writing by the department, all overflows and uncontrolled overflows must be reported orally to the department within 24 hours from the time the permit registrant becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5.

7. Public Notification of Effluent Violation or Overflow
If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the department, the permit registrant must take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

8. Removed Substances
Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling
Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and shall be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points may not be changed without notification to and the approval from the department.

2. Flow Measurements
Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

3. Monitoring Procedures
Monitoring must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in this permit.

4. Penalties of Tampering
The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than $10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a Discharge Monitoring Report form approved by the department. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

6. Additional Monitoring by the Permit registrant
If the permit registrant monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 part CFR part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (e.g., Total Chlorine Residual), only the average daily value must be recorded unless otherwise specified in this permit.

7. Averaging of Measurements
Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which shall be averaged as specified in this permit.

8. Retention of Records
The permit registrant must retain records of all monitoring information, including: all calibration, maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the department at any time.

9. Records Contents
Records of monitoring information must include:
   a. The date, exact place, time, and methods of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

10. Inspection and Entry
The permit registrant must allow the department or an authorized representative upon the presentation of credentials to:
   a. Enter upon the permit registrant's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
   d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes
The permit registrant must comply with OAR chapter 340, division 52, "Review of Plans and Specifications" and 40 CFR §122.41(l)(1). Except where exempted under OAR chapter 340, division 52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by the department. The permit registrant must give notice to the department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance
The permit registrant must give advance notice to the department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

3. Transfers

This permit may be transferred to a new permit registrant provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit may be transferred to a third party without prior written approval from the department. The department may require modification, revocation, and reissuance of the permit to change the name of the permit registrant and incorporate such other requirements as may be necessary. The permit registrant must notify the department when a transfer of property interest takes place.

4. Compliance Schedule
Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Twenty-Four Hour Reporting
The permit registrant must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours, unless otherwise specified in this permit, from the time the permit registrant becomes aware of the circumstances. During normal business hours, the department's Regional office must be called. Outside of normal business hours, the department must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

A written submission must also be provided within 5 days of the time the permit registrant becomes aware of the circumstances. Pursuant to ORS 468.959 (3) (a), if the permit registrant is establishing an affirmative defense of upset or bypass to any offense under ORS 468.922 to 468.946, delivered written notice must be made to the department or other agency with regulatory jurisdiction within 4 (four) calendar days of the time the permit registrant becomes aware of the circumstances. The written submission must contain:
a. A description of the noncompliance and its cause;
b. The period of noncompliance, including exact dates and times;
c. The estimated time noncompliance is expected to continue if it has not been corrected;
d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
e. Public notification steps taken, pursuant to General Condition B.6

The following must be included as information that must be reported within 24 hours under this paragraph:
a. Any unanticipated bypass that exceeds any effluent limitation in this permit.
b. Any upset that exceeds any effluent limitation in this permit.
c. Violation of maximum daily discharge limitation for any of the pollutants listed by the department in this permit.
d. Any noncompliance that may endanger human health or the environment.

The department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. Other Noncompliance
The permit registrant must report all instances of noncompliance not reported under General Condition D.4 or D.5, at the time monitoring reports are submitted. The reports must contain:
a. A description of the noncompliance and its cause;
b. The period of noncompliance, including exact dates and times;
c. The estimated time noncompliance is expected to continue if it has not been corrected; and
d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

7. Duty to Provide Information
The permit registrant must furnish to the department within a reasonable time any information that the department may request to determine compliance with this permit. The permit registrant must also furnish to the department, upon request, copies of records required to be kept by this permit.

Other Information: When the permit registrant becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to the department, it must promptly submit such facts or information.

8. Signatory Requirements
All applications, reports or information submitted to the department must be signed and certified in accordance with 40 CFR §122.22.
9. Falsification of Information
Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed $100,000 per violation and up to 5 years in prison. Additionally, according to 40 CFR §122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a federal civil penalty not to exceed $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

10. Changes to Discharges of Toxic Pollutant
The permit registrant must notify the department as soon as it knows or have reason to believe of the following:
   a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:
      (1) One hundred micrograms per liter (100 µg/l);
      (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
      (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
      (4) The level established by the department in accordance with 40 CFR §122.44(f).

   b. That any activity has occurred or will occur that would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
      (1) Five hundred micrograms per liter (500 µg/l);
      (2) One milligram per liter (1 mg/l) for antimony;
      (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
      (4) The level established by the department in accordance with 40 CFR §122.44(f).

SECTION E. DEFINITIONS

1. Technology based permit effluent limitations means technology-based treatment requirements as defined in 40 CFR §125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
2. mg/l means milligrams per liter.
3. Grab sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
4. Month means calendar month.
5. Week means a calendar week of Sunday through Saturday.

State of Oregon Department of Environmental Quality

NOTICE OF TERMINATION

for NPDES General Permit to Discharge Storm Water Associated with

Construction Activity

Use this form to end permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occurred. **Please print in ink or type.**

I. Permittee

Legal Name		Phone No.
Company		
Mailing Address		
City	State	Zip Code
Facility/File ID (located on face page of permit)		

II. Legally Authorized Representative

(Person completing this form if different from Permittee)

Name		Phone No.
Company		
Mailing Address		
City	State	Zip Code
Title		

III. Site Location/Address

Site Name		
Street Address (or Location Description)		
Section	Township	Range
City (or nearest City)		Zip Code
County		

IV. Status of Construction Activity

- ☐ All soil disturbance activities by the permittee have been completed.
- ☐ The site has undergone final stabilization of all exposed soils through vegetation or other measures and all storm water discharges from construction activities that are authorized by this permit are eliminated.
- ☐ All temporary erosion and sediment controls have been removed and properly disposed.

Date above items were completed:_____

Certification

Please read the certification statement carefully before signing.

I certify under penalty of law that all storm water discharges associated with construction activity from this site that are authorized by this NPDES general permit have been eliminated. By submitting this Notice of Termination, I understand that I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that submittal of this Notice of Termination does not release a permittee from liability for any violations of this permit or the Clean Water Act.

_____ _____

Signature of Legally Authorized Representative Date

_____

Name of Legally Authorized Representative (Type or Print)

SCHN00245159

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

June 28, 2006

JAMIE WILSON
SCHNITZER STEEL INDUSTRIES INC
PO BOX 10047
PORTLAND OR 97296-047

Re: Construction Storm Water Control Permit
ORR10A-472
File No. 115638
County: Multnomah
Site: Schnitzer Steel Industries – New Shredder

Dear Mr. Wilson:

The Oregon Department of Environmental Quality (DEQ) has received your application and application fees for registration for coverage under the National Pollutant Discharge Elimination System (NPDES) Construction Storm Water Discharge Permit 1200-C. The purpose of the Construction Storm Water Discharge Permit is to prevent violations of the State Water Quality Standards and minimize adverse impacts to the environment. This statewide Permit term is five years, beginning December 28, 2005 and expiring November 30, 2010, regardless of when you apply for registration within the 5 year time period.

DEQ is approving your registration of the requested Permit. Please be aware that in addition to the application fees that you have already submitted you will be assessed an annual fee for each additional year of construction activity as long as this permit is in effect.

For phased developments, an erosion control plan for any phases not submitted with your original application must be submitted to this regional DEQ office (Attention: Storm Water) 30 days prior to commencement of construction activities. The plan(s) will be reviewed, and if acceptable, you will be notified of approval by e-mail if your email address is on file with DEQ.

Permit Provisions

Please review your 1200-C Permit copy carefully. In general the Permit:

- prohibits visible or measurable quantities of sediments from leaving the construction site,
- requires erosion control measures be inspected by the permittee – see the Permit for specific activity timelines,
- requires daily visual monitoring when runoff is occurring,
- requires that records of these inspections be kept on site, and
- requires all erosion control measures remain in place through the duration of construction.

If the construction site is 5 acres or greater *and* Permit registration occurs: 4.301 acres as applicated

- after May 31, 2006, a 14-day public review period is required after DEQ review and approval of the Erosion and Sediment Control Plan (ESCP) but prior to DEQ approving the Permit registration, and
- after September 30, 2006, one of two options must be met for storm water discharges to streams impaired for turbidity or sediment:
  - weekly storm water runoff sampling for turbidity when runoff is occurring, *or*
  - additional best management practices must be added.

Legal Owner Responsibilities

If during project development legal responsibility shifts from the present permittee (you) to another party, this permit must be transferred to the new responsible party. There is a $60 filing fee associated with permit transfer, as well as a one page application that must be submitted to DEQ.

Also, it is the responsibility of the owner of the property to properly maintain petroleum separator/trap devices if they are in use at your site.

Construction Storm Water Discharge Permit Termination Process

Be sure to submit the Permit Termination Request Form *(Notice of Termination Form)* to this regional DEQ office when your construction activity is completed. If a Termination Form is not received, you **will be billed** the annual fee for each additional year this permit remains in effect.

Construction Storm Water Discharge Permit coverage may be terminated when the following conditions are met:

- the permittee has constructed and completed all of the buildings;
  - the site is stabilized, i.e. landscaped with vegetation growing, and no exposed soil is present,
  - with no further grading or soil disturbances occurring, and
  - temporary erosion and/or sediment controls have been removed and properly disposed, *or*
- the permittee is selling individual home lots of less than one acre;
  - the utilities, roads, and initial grading are complete, and
  - temporary seeding has occurred, vegetation is growing and no exposed soil is present, and
  - temporary erosion and/or sediment controls have been removed and properly disposed.

In conclusion, this 1200-C Permit does not authorize excavation or fill in state waterways, including wetlands, and does not replace the requirement for receiving authorization to do this type of work under Section 404 of the Clean Water Act.

Please check the DEQ website at http://www.deq.state.or.us/wq/wqpermit/stormwaterhome.htm for forms or information. If you have any questions about this 1200-C Permit, please contact Dennis Jurries by phone at (503) 229-5937 or email at jurries.dennis@deq.state.or.us .

Sincerely,

Dennis Jurries

Dennis Jurries, PE
DEQ NWR Storm Water Engineer
2020 SW 4th Avenue, Suite 400
Portland, OR 97201

Enclosure
cc: File

GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT

Oregon Department of Environmental Quality
811 SW Sixth Avenue, Portland OR 97204
Telephone: (503) 229-5279 or 1-800-452-4011 (toll free in Oregon)

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

REGISTERED TO: 6/28/06 GEN 12C MULTNOMAH/NWR
File No. 115638 ORR10A-472

Schnitzer Steel Industries, Inc.
PO Box 10047
Portland, OR 97296-0047
Site: Schnitzer Steel Industries – New Shredder

SOURCES COVERED BY THIS PERMIT:

Construction activities including clearing, grading, excavation, and stockpiling that will disturb one or more acres and may discharge to surface waters or conveyance systems leading to surface waters of the state. Also included are activities that disturb less than one acre that are part of a common plan of development or sale if the larger common plan of development or sale will ultimately disturb one acre or more and may discharge to surface waters or conveyance systems leading to surface waters of the state. Oregon Administrative Rules (OAR) 340-045-0015 and 0033(5) require all owners or operators responsible for these sources to register under this permit or obtain an individual permit.

This permit does not authorize in-water or riparian work regulated by the Federal Clean Water Act Section 404 permit program. These types of activities are regulated by the Oregon Department of State Lands, U.S. Army Corp of Engineers, and the Department of Environmental Quality Section 401 certification program. Unless specifically authorized by this permit, by another National Pollutant Discharge Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) permit, or by OAR, any other direct or indirect discharge to waters of the state is prohibited, including discharges to an underground injection control (UIC) system.

Lauri Aunan, Administrator
Water Quality Division

Issued: December 28, 2005
Expiration Date: November 30, 2010

PERMITTED ACTIVITIES

Until this permit expires, is modified or revoked, the permit registrant is authorized to construct, install, modify, or operate erosion and sediment control measures and stormwater treatment and control facilities, and to discharge stormwater and certain specified non-stormwater discharges to surface waters of the state in conformance with all the requirements, limitations, and conditions set forth in the permit including attached schedules as follows:

		Page
Schedule A	- Limitations and Controls for Stormwater and Non-Stormwater Discharges	3
Schedule B	- Minimum Monitoring Requirements	12
Schedule C	- Compliance Schedule	14
Schedule D	- Special Conditions	15
Schedule E	- (Not Applicable)	NA
Schedule F	- General Conditions	18

PERMIT REGISTRATION

1. **Renewal Requirements**
   a. Activities Registered Under the Previous 1200-C Permit (issued February 2001).
      i. Permit registrants must submit a complete permit renewal application to the department prior to the permit expiration date of December 31, 2005 to ensure uninterrupted permit coverage under this permit for construction activities continuing beyond December 31, 2005.
      ii. An Erosion and Sediment Control Plan (ESCP) submitted prior to December 31, 2005 is not required to be resubmitted to the department or Agent except as required in Schedule C.
      iii. Permit registrants that do not submit a renewal application by the previous 1200-C expiration date must submit a new application for coverage under this permit and follow condition #2 below.
   b. Renewal of Permit Registration under this Permit (December, 2005)
      i. To maintain continuous permit registration during the renewal process, a permit registrant must submit a complete renewal application with a revised ESCP, if applicable, to the department 180 days prior to this permit expiration unless otherwise approved by the department.
      ii. If the department fails to act on the application by the expiration date, permit registration is administratively extended until the department takes action on the application.
      iii. If registration under the renewed permit is not required or appropriate, the department will notify the applicant.

2. **New Construction Activities**
   a. Applicants seeking registration under this permit must:
      i. Submit a complete department-approved application form with an ESCP that complies with the permit requirements to the department or Agent at least thirty (30) days prior to the planned soil disturbance unless otherwise approved by the department.
      ii. Prior to beginning any soil disturbance activity, receive written notice from the department or Agent that permit registration has been approved.
   b. The department or Agent will register the applicant after the ESCP has been approved by the department or Agent. For construction activities that disturb five (5) or more acres, a public notice period is required as provided in Condition 4 below. The ESCP is approved when the department or Agent provides written notice of approval.
   c. If the application for registration is denied by the department or Agent, a construction activity cannot be registered under this permit, or if the applicant does not wish to be regulated by this permit, the applicant may apply for an individual permit in accordance with OAR 340-045-0030.

3. **Transfer of Permit Registration**
   To transfer permit registration, an owner or permit registrant must submit a department-approved transfer form prior to permit expiration and prior to transfer of ownership or operation.

4. **Public Review Period on Application and ESCP**
   Permit registrants that submit an application and ESCP for construction activities that disturb five (5) or more acres after June 1, 2006 will be subject to a 14-day public review period before permit registration by the department or Agent. The public review period will begin after the department or Agent has determined that the application is complete.

SCHEDULE A
LIMITATIONS AND CONTROLS FOR STORMWATER DISCHARGES

1. **Water Quality Standards**
   a. The permit registrant must not cause a violation of instream water quality standards.
   b. If the permit registrant develops, implements, and revises its ESCP in compliance with Schedule A of this permit, the department assumes that the discharges authorized by this permit will not cause a violation of water quality standards unless the department obtains evidence to the contrary.
   c. In instances were the department determines that the permit registrant's stormwater discharges are causing a violation of water quality standards, the department may take enforcement action for violations of the permit and will require the permit registrant to do one or more of the following:
      i. Develop and implement an Action Plan, which is considered an addendum to the ESCP, describing ESCP modifications that are necessary to prevent and control erosion and sediment discharges to meet water quality standards;
      ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is meeting water quality standards; or
      iii. Curtail stormwater pollutant discharges to the extent possible and submit an individual permit application.

2. **Water Quality Requirements for TMDL and 303(d) Listed Waterbodies**
   In addition to other applicable requirements of this permit, if sediment or turbid water from a permit registrant's construction project has the potential to discharge into waterbodies that are listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity, the permit registrant must implement one of the two following sets of actions, in accordance with Schedule C.

   a. Option #1: Collect and analyze samples for turbidity in stormwater runoff from the construction site as required by condition B.2. (p. 12) and compare the results to the benchmark value of 160 Nephelometric Turbidity Units (NTUs). The benchmark is used to determine if best management practices are effective; it is not an effluent limit. If any stormwater sample exceeds the benchmark, then the permit registrant must evaluate the best management practices (BMPs) and the adequacy of the ESCP and take corrective actions. If after such actions have been implemented and sample results still exceed the 160 NTU benchmark, the requirements of Option #2 below must be followed, and the permit registrant must submit an Action Plan to the department identifying the selected BMP(s) that will be implemented and the rationale for choosing the selected BMP(s).

   b. Option #2: In addition to the applicable BMPs required by condition A.7., implement one or more of the following BMPs to control and treat sediment and turbidity:
      i. Compost berms, compost blankets, or compost socks;
      ii. Erosion control mats (rolled or blown);
      iii. Tackifiers used in combination with perimeter sediment control BMPs;
      iv. Established vegetated buffers sized at 50 feet plus 25 feet per 5 degrees of slope;
      v. Water treatment by electro-coagulation, chemical flocculation, or filtration; or
      vi. Other substantially equivalent sediment or turbidity BMP approved by the department.

   The selected BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided.

3. **Performance Requirements**

a. Prevent Discharge of Significant Amounts of Sediment. The permit registrant must prevent the discharge of significant amounts of sediment to surface waters or conveyance systems leading to surface waters. Significant amounts of sediment result from the actions or inactions of the permit registrant at a site and result in visual indications that sediment has left or is likely to leave the site. The following conditions describe significant amounts of sediment:
   i. Earth slides or mud flows;
   ii. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered or settled to remove sediment;
   iii. Turbid flows of stormwater that are not filtered or settled to remove turbidity;
   iv. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
   v. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity; or
   vi. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity.

b. Corrective Action. If significant amounts of sediment or turbidity (as described in A.3.a above) are visibly detected in: 1) the discharge to a conveyance system leading to surface waters; 2) the discharge to surface waters 50 feet downstream; or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected, the permit registrant must:
   i. Immediately, but no later than 24 hours after initial detection, take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable and to ensure that the requirements of Conditions A.1. and A.3.a. are met.
   ii. Evaluate the ESCP to determine the cause of the discharge.
   iii. Document in the inspection records the corrective actions taken.
   iv. Submit an Action Plan to the department within ten (10) calendar days of the discharge identifying the correction actions taken to cease the discharge, if such actions require a change to the ESCP or a change in the method(s) of implementing the ESCP, (e.g., increased inspection frequency). Approval of the Action Plan by the department prior to implementation of corrective actions is not required. The Action Plan must be kept onsite as per condition B.3., p. 13.

c. Authorized Stormwater Discharges. Subject to compliance with the terms and conditions of this permit, the permit registrant is authorized to discharge the following:
   i. Stormwater associated with construction activity that is authorized by this permit.
   ii. Stormwater from support activities at the construction site (e.g., concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
      (1) The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
      (2) The support activity is not a commercial operation serving multiple unrelated construction projects by different permit registrants, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
      (3) Appropriate controls and measures are identified in an ESCP covering the discharges from the support activity areas.

d. Allowable Non-Stormwater Discharges. This permit authorizes the following non-stormwater discharges to surface water provided they are identified in the ESCP and all necessary controls are implemented to minimize sediment transport:
   i. Discharges from fire-fighting activities;
   ii. Fire hydrant and potable water flushing (refer to department guidance);
   iii. Waters used to wash vehicles where detergents or hot water are not used;
   iv. Potable water including uncontaminated water line flushing;
   v. Routine external building wash down that does not use detergents or hot water;
   vi. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or hot water are not used;
   vii. Uncontaminated air conditioning or compressor condensate;
   viii. Construction dewatering activities;
   ix. Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
   x. Landscape irrigation.

   For other non-stormwater discharges, the permit registrant may ask the department to determine if another permit is needed. The disposal of wastes to surface water or onsite is not authorized by this permit. The permit registrant must submit a separate permit application for such discharges.

4. Erosion and Sediment Control Plan (ESCP) and Action Plan Preparation and Submittal

a. Responsibilities of Permit Registrant. The permit registrant must ensure that an ESCP is prepared and revised as necessary for the construction activity regulated by this permit and submitted to the department or Agent as required by this permit.

b. Qualifications to Prepare ESCP.
   i. For construction activities disturbing 20 or more acres, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society).
   ii. If engineered facilities such as sedimentation basins or diversion structures for erosion and sediment control are required, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer.

c. Submittal of ESCP and if Required, Action Plans.
   i. The permit registrant must submit the ESCP to the department or Agent prior to obtaining registration under this permit (see Permit Registration, Condition 2 of this permit, p. 2).
   ii. If ESCP revisions are made after permit registration is approved, the permit registrant must submit revisions to the ESCP in the form of an Action Plan to the department, or if corrective actions are required by A.3.b., p. 4, within 24 hours of initial detection of the stormwater discharge.
      (1) The Action Plan is considered an addendum to the ESCP.
      (2) Approval of the Action Plan by the department prior to implementation of corrective actions is not required.
      (3) An Action Plan may be required due to changes in the project design, local conditions, project schedule (e.g., schedule delays postpone earthwork to wet weather season so additional controls are needed), weather conditions or other appropriate reasons.
      (4) The Action Plan must clearly identify any necessary changes (such as type or design) to the BMPs identified in the ESCP, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.

iii. If the permit registrant does not receive a response on the Action Plan from the department or Agent within ten (10) days of the Action Plan receipt, the proposed revisions are deemed approved.

iv. The department or Agent may require the permit registrant to submit an Action Plan at any time if the ESCP is inadequate to prevent the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters. The permit registrant must submit the Action Plan according to the timeframe specified by the department or Agent.

5. ESCP Implementation

a. The permit registrant must ensure that the ESCP is implemented for the construction activity regulated by this permit. Failure to implement any portion of the ESCP constitutes violation of the permit on the part of the permit registrant.

b. The permit registrant must ensure that the ESCP is implemented according to the following sequence:

i. Before Construction.

(1) Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved.

(2) Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas.

(3) Hold a pre-construction meeting of project construction personnel that includes the inspector required by condition A.6.b. to discuss of erosion and sediment control measures and construction limits.

ii. During and After Construction.

(1) Site Access Areas (construction entrances, roadways equipment parking areas).
Stabilize site entrances and access roads prior to earthwork.

(2) Install Sediment Control Measures.
Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers which must be in place before vegetation is disturbed.

(3) Non-Stormwater Pollution Control Measures.
Concurrent with establishing construction access controls and sediment controls, the permit registrant must establish material and waste storage areas, concrete truck and other concrete equipment washout areas and other non-stormwater controls prior to the start of construction activities.

(4) Runoff Control.
Stabilize stream banks and construct the primary runoff control measures to protect areas from concentrated flows.

(5) Land Clearing, Grading and Roadways.

(a) Begin land clearing, excavation, trenching, cutting or grading after installing applicable sediment and runoff control measures.

(b) Provide appropriate erosion and sediment control BMPs for all roadways including gravel roadways.

(c) Install additional control measures as work progresses as needed.

(6) Surface Stabilization (temporary and permanent seeding, mulching).
Apply temporary or permanent soil stabilization measures immediately on all disturbed areas as grading progresses.

(7) Construction and Paving (install utilities, buildings, paving, etc.).
Erosion and sediment control measures must remain in place for the duration of construction, including protection for active storm drain inlets and appropriate non-stormwater pollution controls.

(8) Final Stabilization and Landscaping.

SCHN00245182

Provide permanent erosion prevention measures on all exposed areas and remove all temporary control measures as areas are stabilized.

6. ESCP Elements

The permit registrant must ensure that the ESCP contains the following elements:

a. Local Government Requirements. Include any procedures necessary to meet applicable local government erosion and sediment control or stormwater management requirements.

b. Inspections.
   i. Inspections must be conducted by a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality, is knowledgeable in the correct installation of the erosion and sediment controls, and is able to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.
   ii. Identify the person(s) or title and experience of the personnel that will conduct inspections. Provide the following for each person:
      (1) Name;
      (2) Contact phone number and, if available, e-mail address; and
      (3) Description of experience and training.

c. Narrative Site Description.
   i. Nature of the construction activity, including a proposed timetable for major activities;
   ii. Estimates of the total area of the permitted site and the area of the site that is expected to undergo clearing, grading or excavation;
   iii. Nature of the fill material to be used, the insitu soils, and the erosion potential of such soils; and
   iv. Names of the receiving water(s) for stormwater runoff.

d. Site Map.
   i. The site map kept on site must represent the actual BMP controls being used onsite, particularly those BMPs identified in the most recent Action Plan(s);
   ii. The site map must show sufficient roads and features for the department or Agent to locate and access the site;
   iii. Total property boundary including surface area of the development;
   iv. Areas of total soil disturbance (including, but not limited to, showing cut and fill areas and pre and post development elevation contours);
   v. Drainage patterns before and after finish grading;
   vi. Location(s), size, and type of discharge point(s);
   vii. Areas used for the storage of soils or wastes;
   viii. Areas where vegetative practices are to be implemented;
   ix. Location of all erosion and sediment control measures or structures;
   x. Location of impervious structures after construction is completed. Include buildings, roads, parking lots, outdoor storage areas, etc., if any;
   xi. Springs, wetlands and other surface waters located on-site;
   xii. Boundaries of 100-year floodplains if determined and easily available;
   xiii. Location of stormwater discharge points to receiving water(s) or stormwater conveyance systems if applicable;

xiv. Location of storm drain catch basins and the location of catch basins with inlet protection, if applicable and a description of the type of catch basins used (e.g., curb inlet, field inlet, grated drain, combination, etc.);
xv. Location of septic drain fields if applicable;
xvi. Location of existing or proposed drywells or other UICs if applicable;
xvii. Location of drinking water wells;
xviii. Details of sediment and erosion controls including installation techniques; and
xix. Details of detention ponds, storm drain piping, inflow and outflow details.

e. Implementation Schedule and Description of BMPs
Include in the ESCP the implementation schedule and description of BMPs to be used at the site. See Condition A.5. for implementation requirements and conditions A.7. and A.8. for minimum BMP requirements.

7. **Required BMPs**
The following controls and practices, if appropriate for the site, are required in the ESCP and must be implemented according to the schedule in the ESCP. If the permit registrant determines that any of these controls or practices is not appropriate, the rationale for the change must be provided in the ESCP.

a. Wet Weather BMPs.
i. Generally construction activities must avoid or minimize excavation and bare ground activities that occur on slopes greater than five (5) percent during the period of October 1 through May 31.
ii. Temporary stabilization of soils must be installed at the end of the shift before a holiday or weekend if needed based on weather forecast.

b. Runoff Controls.
In developing runoff control practices, at a minimum the following BMPs must be considered: slope drains, energy dissipaters, diversion of run-on, temporary diversion dikes, grass-lined channel (turf reinforcement mats), trench drains, drop inlets, and check dams.

c. Erosion Prevention Methods.
In developing erosion prevention methods, at a minimum the following BMPs must be considered:
i. Clearing and Grading Practices.
(1) Provide structural erosion prevention during grading and earthwork-surface roughening and prevent erosion on graded surfaces.
(2) Top-soiling, temporary seeding and planting, permanent seeding and planting, mycorrhizae/ biofertilizers, mulches, compost blankets, erosion control blankets and mats, soil binders, soil tackifiers, sodding vegetative buffer strips, and protection of trees with protective construction fences.
ii. Wind Erosion/Dust Control.
(1) All erosion and sediment controls not in the direct path of work must be installed before any land disturbance.
(2) Whenever practicable, clearing and grading must be done in a phased manner to prevent exposed inactive areas from becoming a source of erosion.
iii. Vegetative Erosion Control Practices.
(1) Preserve existing vegetation and re-vegetate open areas when practicable before and after grading or construction.

SCHN00245184

(2) Biotechnical erosion control measures: live staking, live fascines and brush wattles, stabilization mats, pole planting, brush box, fascines with sub-drains, live pole drains, and brush packing or live gully fill repair.
(3) All temporary sediment control practices must not be removed until permanent vegetation or other cover of exposed areas is established.
(4) If vegetative seed mix is used, identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover).

d. Sediment Controls.
   i. Peripheral Erosion and Sediment Controls.
      (1) Sediment control must be provided along the site perimeter and at all operational internal storm drain inlets at all times during construction.
      (2) Active inlets must be considered part of the site perimeter because they provide an avenue for sediment and other pollutants to leave the site.
   ii. Erosion Control Practices.
      In developing sediment control practices, include in the ESCP installation details and at a minimum the following must be considered: sediment fences, sand bag barrier, gravel bag berm, earth dikes, drainage swales, check dams, subsurface drains which daylight to the surface, pipe slope drains, rock outlet protection, sediment traps, rock and brush filters, compost berm/compost sock, fiber rolls/wattles, storm drain inlet protection, and temporary or permanent sedimentation basins.
   iii. Reducing Sediment Tracking.
      (1) Prior to any land disturbing activities each site must have graveled, paved, or constructed entrances, exits and parking areas with exit tire wash to reduce the tracking of sediment onto public or private roads.
      (2) All unpaved roads located onsite must be graveled. Other effective erosion and sediment control measures either on the road or down gradient may be used in place of graveling.
      (3) When trucking saturated soils from the site, either water-tight trucks must be used or loads must be drained on-site until dripping has been reduced to minimize spillage on roads.

e. Non-Stormwater Pollution Controls.
   Non-Stormwater Pollution Controls BMPs must be in-place throughout the grading and construction phases. In developing non-stormwater pollution control practices, at a minimum the following must be considered:
   i. Pollution Prevention.
      (1) BMPs used to prevent pollution of stormwater or to treat stormwater from the following activities: dewatering and ponded water management, paving operation controls, temporary equipment bridge, illicit connection, and illegal discharge.
      (2) BMPs that will be used to prevent or minimize stormwater from being exposed to pollutants from spills, no discharge of concrete truck wash water, vehicle and equipment cleaning, vehicle and equipment fueling, maintenance, and storage, other cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations.
   ii. Stockpile Erosion and Sediment Control Practices.
      (1) Stockpiles located away from the construction activity but still under the control of the permit registrant must also be protected to prevent significant amounts of sediment or turbid water from discharging to surface waters.
      (2) At the end of each workday the soil stockpiles must be stabilized, covered or other BMPs must be implemented to prevent discharges to surface waters.

(3) In developing these practices, at a minimum the following must be considered: diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of sediment fences around stockpiles

iii. Solid Waste and Hazardous Materials Management.

(1) The department encourages the permit registrant to reuse and recycle construction wastes.

(2) Any use of toxic or other hazardous materials must include proper storage, application, and disposal.

(3) In developing these practices, at a minimum the following must be described in the ESCP and implemented where practical: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures; regular maintenance schedule for vehicles and machinery; and material delivery and storage controls, training and signage, material use, covered storage areas for waste and supplies.

(4) The permit registrant must manage hazardous wastes, used oils, contaminated soils, concrete management, sanitary waste management, liquid waste management, or other toxic substances discovered or generated during construction activities in accordance with state and federal regulations. In some cases, department approval for management and disposal may be required.

f. Inspection and Maintenance.

To provide for continued performance, BMPs must be inspected before, during, and after significant storm events. During grading and construction, the permit registrant is responsible for maintaining the stormwater pollution control BMPs. The permit registrant must establish and promptly implement procedures for maintenance and repair of erosion and sediment control measures.

i. General Site Maintenance.

(1) Significant amounts of sediment that leave the site must be cleaned up within 24 hours and placed back on the site and stabilized or disposed of properly. In addition, the source(s) of the sediment must be controlled to prevent continued discharge within 24 hours. Any instream clean up of sediment must be preformed according to requirements and timelines set by the Oregon Department of State Lands.

(2) Sediment must not be intentionally washed into storm sewers or drainage ways. Vacuuming or dry sweeping must be used to clean up released sediments.

(3) If fertilizers are used to establish vegetation, the application rates must follow manufacturer's guidelines and the application must be done in such a way to minimize nutrients discharging to surface waters.

ii. Maintenance of Erosion and Sediment Controls.

(1) For a sediment fence, the trapped sediment must be removed before it reaches one third of the above ground fence height.

(2) Other sediment barriers (e.g., biobags): the sediment must be removed before it reaches two inches of accumulation in any area above the sediment barrier(s).

(3) For catch basin protection, cleaning must occur when sediment retention capacity has been reduced by fifty percent.

(4) For a sediment basin, removal of trapped sediments must occur when design capacity has been reduced by fifty percent.

iii. Stormwater Treatment System Requirement.

If a stormwater treatment system (e.g., electro-coagulation, chemical flocculation, filtration, etc.) for sediment removal is employed, an operation and maintenance plan must be submitted to the department for approval before start up of the treatment system. Upon department approval of the plan, the permit registrant must implement the plan.

8. **Additional BMP Requirements During Inactive Periods**
   a. If all construction activities cease at the site for thirty (30) days or more, the entire site must be stabilized using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.

   b. On any significant portion of the site, if construction activities cease for fifteen (15) days or more, temporary covering with straw or compost mulch or other covering that is tackified to prevent soil or wind erosion must occur until work resumes.

SCHEDULE B
MINIMUM MONITORING REQUIREMENTS

1. **Visual Monitoring Requirement**
   a. The following must be inspected by the permit registrant:
      i. All areas of the site disturbed by construction activity to ensure that BMPs are in working order.
      ii. Discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.
      iii. BMPs identified in the ESCP and any ESCP revisions documented in Action Plan(s) to assess whether they are functioning properly.
      iv. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
      v. Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.

   b. All ESCP controls and practices must be inspected visually according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snow melt, is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than seven (7) consecutive calendar days	Once every two (2) weeks.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.

2. **Turbidity Monitoring Requirements for TMDL and 303(d) Listed Waterbodies per Option #1 in Condition A.2.a., p. 3.**
   In addition to the requirements in condition B.1. above, permit registrants discharging into waterbodies that are listed for turbidity or sedimentation on the most recently EPA approved Oregon 303(d) list or have an established TMDL for sedimentation or turbidity are subject to the following requirements if Option #1 (condition A.2.a..) is being followed:

Parameter	Minimum Frequency	Monitoring Points	Type of Sample	Test Method
Turbidity (NTU)	At a minimum one stormwater sample that represents the flow and characteristics of the stormwater discharge must be collected at each monitoring point on a weekly basis when stormwater runoff is detectable.	All stormwater discharge points indicated on the site map see A.6.d.xiii., p. 7.	Grab	Field turbidimeter

[1] Occurring during regular working hours at the construction site.
[2] The permit registrant must use sampling procedures, testing methods and turbidity meter calibration methods approved by the department.

SCHN00245188

3. Recordkeeping Requirements PREPARE CHECKLIST

a. Documentation of Visual Inspection. All visual inspections must be documented in writing as follows:
   i. Inspection date and inspector's name.
   ii. At the designated discharge location(s) inspections of the quality of the discharge for any turbidity, color, sheen, or floating materials.
      (1) Inspect and record color and turbidity or clarity in: 1) the discharge to a conveyance system leading to surface waters, 2) the discharge to surface waters 50 feet downstream, or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected.
      (2) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters. For a sheen or floating material, describe whether this is present or absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
   iii. If a site is inaccessible due to inclement weather, record the inspections noted at a relevant discharge point or downstream location if practical.
   iv. Location(s) of BMPs that need to be maintained, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and non-stormwater pollution (e.g., paints, oils, fuels, adhesives) controls.
   v. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
   vi. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
   vii. Corrective action required and implementation dates.

b. ESCP including Action Plan(s) Retained Onsite. A copy of the ESCP and the Action Plan must be retained on-site and made available on request to the department, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the ESCP must be retained by the permit registrant but does not need to be at the construction site.

c. Inspection and Monitoring Results. All inspection records and monitoring results must be kept on-site and maintained by the permit registrant, made available to the department, Agent, or local municipality upon request, and must include:
   i. The construction site name as it appears on the registrant's permit and the file or site number.
   ii. All Action Plans that describe reasons for required changes or modifications to the ESCP and/or other corrective measures implemented during the previous reporting period.
   iii. Turbidity sampling results required by Condition B.2., p. 12 if applicable.

d. Retention of Inspection and Monitoring Results for Three (3) Years:
   i. All inspection records and monitoring results must be retained for at least three (3) years after project completion.
   ii. In addition, these records must be delivered or made available to the department within three (3) working days of request.

SCHEDULE C
COMPLIANCE SCHEDULE

Potential discharges into waterbodies that are on the most recent EPA-approved Oregon 303(d) list for turbidity or sedimentation or have a TMDL for turbidity or sedimentation

1. **Permit registrants who obtained permit coverage prior to October 1, 2006 must:**
   a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements in Condition A.2. by October 1, 2006.
   b. For future TMDLS or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

2. **Permit registrants obtaining coverage after October 1, 2006 must:**
   a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements of Condition A.2. upon obtaining coverage under the permit. If Option #2 is selected, the BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit and the rationale for choosing the selected BMP(s) must also be provided.
   b. For future TMDLS or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

SCHEDULE D
SPECIAL CONDITIONS

1. In the event of any inconsistency between Schedules A through D and F, Schedules A through D will apply.

2. Registration under this permit does not relieve the permit registrant from all other permitting and licensing requirements. Prior to beginning construction activities, the permit registrant must obtain all other necessary approvals.

3. **Required Actions Prior to Termination of Permit Registration**
   a. The following conditions must be met before permit registration is terminated:
      i. There is no reasonable potential for discharge of a significant amount of construction related sediment or turbidity to surface waters.
      ii. Construction materials, waste, and temporary erosion and sediment controls have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls.
      iii. All soil disturbance activities by the permittee have been completed and all stormwater discharges from construction activities that are authorized by this permit are eliminated.
      iv. All temporary erosion and sediment controls have been removed and properly disposed.
      v. All disturbed or exposed areas of the site must be fully stabilized as defined in Condition D.4 m. below.

   b. The permit registrant must complete and submit a Notice of Termination form to the department or Agent after the conditions in D.3.a. above have been satisfied. The department or Agent will not act on a request for termination until all outstanding compliance issues are resolved.

4. **Permit-specific Definitions**
   a. *Action Plan* means an addendum to the ESCP that describes ESCP modifications.
   b. *Agent* means a governmental entity that has an agreement with the department to assist with implementation of this general permit.
   c. *Best Management Practices or BMPs* means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.
   d. *Borrow Area* means the area from which material is excavated to be used as fill material in another area.
   e. *Clean Water Act or CWA* means the Federal Water Pollution Control Act (FWPCA) enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.
   f. *Department or DEQ* means the Oregon Department of Environmental Quality.
   g. *Detention* means the temporary storage of stormwater to improve quality or reduce the volumetric flow rate of discharge or both.
   h. *Dewatering* means the removal and disposal of surface water or groundwater for purposes of preparing a site for construction.
   i. *Discharge Point* means the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.
   j. *Erosion* means the movement of soil particles or rock fragments by water or wind.
   k. *Erosion and Sediment Control BMPs* means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering,

SCHN00245191

filter fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

l. *Erosion Prevention Methods* means a wide range of erosion prevention practices, materials and methods to be applied during earthwork activities including structural methods, techniques to prevent erosion on already graded surfaces, and biotechnical erosion control methods. The best way to control the discharge of sediment and related pollutants from a construction site is to prevent erosion from occurring in the first place.

m. *Final Stabilization or Fully Stabilized* means the completion of all soil disturbing activities at the site by the permit registrant, and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) to prevent erosion.

n. *Hazardous Materials* means the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.

o. *Local Government* means any county, city, town, or service district.

p. *National Pollutant Discharge Elimination System or NPDES* means the national program under Section 402 of the Federal Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.

q. *Non-Stormwater Pollution Controls* means general site and materials management measures that directly or indirectly aid in minimizing the discharge of sediment and other construction related pollutants from the construction site.

r. *Permit Registrant* means the owner or operator of the construction activity regulated by this permit who receives notice of registration under this general permit. Owners or operators may be individuals or other legal entities.

s. *Pollutant* as defined in 40 CFR §122.2 means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

t. *Pollution or Water Pollution* as defined by ORS 468B.005(3) means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

u. *Runoff Controls* means BMPs that are designed to control the peak volume and flow rate and to prevent scour due to concentrated flows.

v. *Sediment* means solid unconsolidated rock and mineral fragments that come from the weathering of rocks and are transported by water, air, or ice and form layers on the Earth's surface. Sediments can also result from chemical precipitation or secretion by organisms.

w. *Site* means the area where the construction activity is physically located or conducted.

x. *Source Control BMPs* means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

y. *Stormwater Conveyance* means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.

z. *Stormwater as defined by 40 CFR §122.26(b)(13)* means stormwater runoff, snow melt runoff, and surface runoff and drainage.

aa. *Surface Runoff* means that portion of stormwater that does not infiltrate into the ground or evaporates, but instead flows onto adjacent land or watercourses or is routed to stormwater conveyance systems.

bb. *Surface Water* means all water naturally open to the atmosphere (e.g., rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.).

cc. *Total Daily Maximum Load or TMDL* means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by the department to the various pollutant sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.

dd. *Turbidity* means the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.

ee. *Underground Injection Control or UIC* means any system, structure, or activity that is created to place fluid below the ground or sub-surface (e.g., sumps, infiltration galleries, drywells, trench drains, drill holes, etc.)

ff. *Water or Waters of the State as defined by ORS 468B.005(8)* means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

SCHEDULE F
NPDES GENERAL CONDITIONS

SECTION A. STANDARD CONDITIONS

1. Duty to Comply
   The permit registrant must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Oregon Revised Statutes (ORS) 468B.025, and 40 Code of Federal Regulations (CFR) §122.41(a), and is grounds for enforcement action; for permit termination, revocation or reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Water Pollution and Permit Condition Violations
   ORS 468.140 allows the department to impose civil penalties up to $10,000 per day for violation of a term, condition, or requirement of a permit. Additionally 40 CFR §122.41 (A) provides that any person who violates any permit condition, term, or requirement may be subject to a federal civil penalty not to exceed $25,000 per day for each violation.

   Under ORS 468.943 and 40 CFR §122.41(a), unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to $25,000 imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

   Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a Class B felony punishable by a fine not to exceed $200,000 and up to 10 years in prison. Additionally, under 40 CFR §122.41(a) any person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a federal civil penalty not to exceed $100,000, and up to 6 years in prison.

3. Duty to Mitigate
   The permit registrant must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the department, the permit registrant must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

4. Duty to Reapply
   If the permit registrant wishes to continue an activity regulated by this permit after the expiration date of this permit, the permit registrant must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit. The department may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions
   This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:
   a. Violation of any term, condition, or requirement of this permit, a rule, or a statute
   b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts
   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge
   d. The permit registrant is identified as a Designated Management Agency or allocated a wasteload under a Total Maximum Daily Load (TMDL)
   e. New information or regulations
   f. Modification of compliance schedules
   g. Requirements of permit re-opener conditions
   h. Correction of technical mistakes made in determining permit conditions
   i. Determination that the permitted activity endangers human health or the environment
   j. Other causes as specified in 40 CFR §§122.62, 122.64, and 124.5

The filing of a request by the permit registrant for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Toxic Pollutants
The permit registrant must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights
The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to persons of property or invasion of any other private rights, nor any infringement of federal, tribal, state, or local laws or regulations.

8. Permit References
Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act and OAR 340-041-0033for toxic pollutants, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

9. Permit Fees
The permit registrant must pay the fees required by OAR 340-045-0070 to 0075.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance
The permit registrant must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permit registrant to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permit registrant only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Duty to Halt or Reduce Activity
For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permit registrant must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permit registrant in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities
   a. Definitions
      (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation or the diversion is due to nonuse of nonessential treatment units or processes at the treatment facility.
      (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

   b. Prohibition of bypass.
      (1) Bypass is prohibited unless:
         (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
         (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of

reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The permit registrant submitted notices and requests as required under General Condition B.3.c.

(2) The department may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the department determines that it will meet the three conditions listed above in General Condition B.3.b.(1).

c. Notice and request for bypass.

(1) Anticipated bypass. If the permit registrant knows in advance of the need for a bypass, a written notice must be submitted to the department at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permit registrant must submit notice of an unanticipated bypass as required in General Condition D.5.

4. Upset

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permit registrant. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B.4.c are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance is not final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permit registrant who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permit registrant can identify the causes(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permit registrant submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and

(4) The permit registrant complied with any remedial measures required under General Condition A.3 hereof.

d. Burden of proof. In any enforcement proceeding, the permit registrant seeking to establish the occurrence of an upset has the burden of proof.

5. Treatment of Single Operational Upset

For purposes of this permit, A Single Operational Upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

6. Overflows from Stormwater Conveyance Systems (privately owned)

a. Definitions

(1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system through a designed overflow device or structure, other than discharges to the wastewater treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system which causes it to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.

(3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure.

b. Prohibition of overflows. Overflows are prohibited unless:
   (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
   (2) There were no feasible alternatives to the overflows, such as the use of auxiliary conveyance systems, or maximization of conveyance system storage; and
   (3) The overflows are the result of an upset as defined in General Condition B.4 and meeting all requirements of this condition.

c. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.

d. Reporting required. Unless otherwise specified in writing by the department, all overflows and uncontrolled overflows must be reported orally to the department within 24 hours from the time the permit registrant becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5.

7. Public Notification of Effluent Violation or Overflow
If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the department, the permit registrant must take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

8. Removed Substances
Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling
Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and shall be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points may not be changed without notification to and the approval from the department.

2. Flow Measurements
Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

3. Monitoring Procedures
Monitoring must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in this permit.

4. Penalties of Tampering
The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than $10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a Discharge Monitoring Report form approved by the department. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

6. Additional Monitoring by the Permit registrant
If the permit registrant monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 part CFR part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (e.g., Total Chlorine Residual), only the average daily value must be recorded unless otherwise specified in this permit.

7. Averaging of Measurements
Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which shall be averaged as specified in this permit.

8. Retention of Records
The permit registrant must retain records of all monitoring information, including: all calibration, maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the department at any time.

9. Records Contents
Records of monitoring information must include:
   a. The date, exact place, time, and methods of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

10. Inspection and Entry
The permit registrant must allow the department or an authorized representative upon the presentation of credentials to:
   a. Enter upon the permit registrant's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
   d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes
The permit registrant must comply with OAR chapter 340, division 52, "Review of Plans and Specifications" and 40 CFR §122.41(l)(1). Except where exempted under OAR chapter 340, division 52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by the department. The permit registrant must give notice to the department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance
The permit registrant must give advance notice to the department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

3. Transfers

This permit may be transferred to a new permit registrant provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit may be transferred to a third party without prior written approval from the department. The department may require modification, revocation, and reissuance of the permit to change the name of the permit registrant and incorporate such other requirements as may be necessary. The permit registrant must notify the department when a transfer of property interest takes place.

4. Compliance Schedule
Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Twenty-Four Hour Reporting
The permit registrant must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours, unless otherwise specified in this permit, from the time the permit registrant becomes aware of the circumstances. During normal business hours, the department's Regional office must be called. Outside of normal business hours, the department must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

A written submission must also be provided within 5 days of the time the permit registrant becomes aware of the circumstances. Pursuant to ORS 468.959 (3) (a), if the permit registrant is establishing an affirmative defense of upset or bypass to any offense under ORS 468.922 to 468.946, delivered written notice must be made to the department or other agency with regulatory jurisdiction within 4 (four) calendar days of the time the permit registrant becomes aware of the circumstances. The written submission must contain:
a. A description of the noncompliance and its cause;
b. The period of noncompliance, including exact dates and times;
c. The estimated time noncompliance is expected to continue if it has not been corrected;
d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
e. Public notification steps taken, pursuant to General Condition B.6

The following must be included as information that must be reported within 24 hours under this paragraph:
a. Any unanticipated bypass that exceeds any effluent limitation in this permit.
b. Any upset that exceeds any effluent limitation in this permit.
c. Violation of maximum daily discharge limitation for any of the pollutants listed by the department in this permit.
d. Any noncompliance that may endanger human health or the environment.

The department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. Other Noncompliance
The permit registrant must report all instances of noncompliance not reported under General Condition D.4 or D.5, at the time monitoring reports are submitted. The reports must contain:
a. A description of the noncompliance and its cause;
b. The period of noncompliance, including exact dates and times;
c. The estimated time noncompliance is expected to continue if it has not been corrected; and
d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

7. Duty to Provide Information
The permit registrant must furnish to the department within a reasonable time any information that the department may request to determine compliance with this permit. The permit registrant must also furnish to the department, upon request, copies of records required to be kept by this permit.

Other Information: When the permit registrant becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to the department, it must promptly submit such facts or information.

8. Signatory Requirements
All applications, reports or information submitted to the department must be signed and certified in accordance with 40 CFR §122.22.
9. Falsification of Information
Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed $100,000 per violation and up to 5 years in prison. Additionally, according to 40 CFR §122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a federal civil penalty not to exceed $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

10. Changes to Discharges of Toxic Pollutant
The permit registrant must notify the department as soon as it knows or have reason to believe of the following:
   a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:
      (1) One hundred micrograms per liter (100 µg/l);
      (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
      (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
      (4) The level established by the department in accordance with 40 CFR §122.44(f).

   b. That any activity has occurred or will occur that would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
      (1) Five hundred micrograms per liter (500 µg/l);
      (2) One milligram per liter (1 mg/l) for antimony;
      (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
      (4) The level established by the department in accordance with 40 CFR §122.44(f).

SECTION E. DEFINITIONS

1. Technology based permit effluent limitations means technology-based treatment requirements as defined in 40 CFR §125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
2. mg/l means milligrams per liter.
3. Grab sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
4. Month means calendar month.
5. Week means a calendar week of Sunday through Saturday.

State of Oregon Department of Environmental Quality

NOTICE OF TERMINATION

for NPDES General Permit to Discharge Storm Water Associated with

Construction Activity

Use this form to end permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occurred. **Please print in ink or type.**

I. Permittee

Legal Name		Phone No.
Company		
Mailing Address		
City	State	Zip Code
Facility/File ID (located on face page of permit)		

II. Legally Authorized Representative

(Person completing this form if different from Permittee)

Name		Phone No.
Company		
Mailing Address		
City	State	Zip Code
Title		

III. Site Location/Address

Site Name		
Street Address (or Location Description)		
Section	Township	Range
City (or nearest City)		Zip Code
County		

IV. Status of Construction Activity

- ☐ All soil disturbance activities by the permittee have been completed.
- ☐ The site has undergone final stabilization of all exposed soils through vegetation or other measures and all storm water discharges from construction activities that are authorized by this permit are eliminated.
- ☐ All temporary erosion and sediment controls have been removed and properly disposed.

Date above items were completed:_____

Certification

Please read the certification statement carefully before signing.

I certify under penalty of law that all storm water discharges associated with construction activity from this site that are authorized by this NPDES general permit have been eliminated. By submitting this Notice of Termination, I understand that I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that submittal of this Notice of Termination does not release a permittee from liability for any violations of this permit or the Clean Water Act.

_____ _____

Signature of Legally Authorized Representative Date

_____

Name of Legally Authorized Representative (Type or Print)

SCHN00245201

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave., Portland, Oregon 97203-5452
(503) 823-5600

July 13, 2005

Mr. Jim Jakubiak
Schnitzer Steel Industries, Inc.
PO Box 10047
Portland, OR 97296-0047

Subject: Stormwater Sampling Results

Dear Mr. Jakubiak:

As part of the Industrial Stormwater Program, City staff perform routine sampling at industries within the City of Portland that have general stormwater permits.

Enclosed are the results of a stormwater sample, collected on April 1, 2005, from your facility located on 12005 N Burgard. The samples were collected from monitoring points 03, 05, 06, and 20 which discharge into the Willamette River. Please note that the following parameters exceeded the benchmarks contained in your company's NPDES 1200-Z Stormwater Permit.

SAMPLE LOCATION: 03

CONSTITUENT	RESULT	BENCHMARK
Chemical oxygen demand (COD)	820 mg/l	n/a
Total Suspended Solids (TSS)	216 mg/l	130 mg/l
Copper	0.343 mg/l	0.1 mg/l
Lead	0.791 mg/l	0.4 mg/l
Zinc	4.1 mg/l	0.6 mg/l

SAMPLE LOCATION: 05

CONSTITUENT	RESULT	BENCHMARK
Total Suspended Solids (TSS)	132 mg/l	130 mg/l
Copper	0.183 mg/l	0.1 mg/l
Lead	0.42 mg/l	0.4 mg/l
Zinc	1.47 mg/l	0.6 mg/l

SAMPLE LOCATION: 06

CONSTITUENT	RESULT	BENCHMARK
Oil & Grease	24.1 mg/l	10 mg/l

When benchmarks are not achieved, Schedule A(8) of the permit requires the Permittee to review their Storm Water Pollution Control Plan within sixty (60) days of receiving sample results. Results of this review are to be submitted to DEQ and the City in accordance with Schedule B(3). Please note that sampling conducted by the City may not be used to satisfy your permit-required self-monitoring.

The City collects additional samples for COD analysis as a screening process to evaluate whether or not other pollutant sources may be present that would not be detected through the standard 1200-Z permit suite of parameters. Please note that COD at sample point 03 was much higher than COD at the other three sample points. COD is a measurement of the amount of oxygen that can be oxidized by organic and inorganic compounds in a sample. Thus, it may represent a broad range of potential pollutants such as organic materials, chemicals, dissolved solids, etc. As part of your SWPCP review, you should also evaluate the drainage basin above sample point 03 to identify potential sources of elevated COD in stormwater.

If you have any questions regarding this letter, please feel free to contact me at 503-823-7383. Thank you.

Sincerely,

Aaron B. Wieting, R.G., C.H.M.M.
Environmental Technician
Industrial Stormwater Program

Enclosures

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 04/01/05 9:15 **System ID** AJ02928 **Sample ID** **SWM050005**

Page No.: 1

Proj./Company Name: SCHNITZER STEEL INTERNATIONAL
Address/Location: 12005 N BURGARD

Date Received: 04/01/05

Sample Status: COMPLETE AND VALIDATED

Proj Subcategory: INDUSTRIAL STORMWATER SAMPLING
Sample Point Code: 03
IMS File # / LCODE: 3060.001 SCHNITZSW

Sample Type: GRAB
Sample Matrix: STORMWTR
Collected By: ABW

Comments:

Test Parameter	Result	Units	MRL	Method
FIELD				
pH (FIELD)	7.3	pH Units	0.1	SM 4500-H B
GENERAL				
COD	820	mg/L	5	SM 5220 D
OIL & GREASE, TOTAL	5.1	mg/L	5	EPA 1664
TOTAL SUSPENDED SOLIDS	216	mg/L	2	SM 2540 D
METALS BY ICP-MS (TOTAL) - 3				
COPPER	0.343	mg/L	0.0002	EPA 200.8
LEAD	0.791	mg/L	0.0001	EPA 200.8
ZINC	4.10	mg/L	0.0005	EPA 200.8
OUTSIDE				
MERCURY	0.00189	mg/L	0.000500	EPA 1631

End of Report for Sample ID: **SWM050005**

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Report Date: 06/27/05
Validated By:

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 04/01/05 9:05 **System ID** AJ02927 **Sample ID** **SWM050004**

Page No.: 1

Proj./Company Name: SCHNITZER STEEL INTERNATIONAL
Address/Location: 12005 N BURGARD

Date Received: 04/01/05

Sample Status: COMPLETE AND VALIDATED

Proj Subcategory: INDUSTRIAL STORMWATER SAMPLING
Sample Point Code: 05
IMS File # / LCODE: 3060.001 SCHNITZSW

Sample Type: GRAB
Sample Matrix: STORMWTR
Collected By: ABW

Comments:

Test Parameter	Result	Units	MRL	Method
FIELD				
pH (FIELD)	7.2	pH Units	0.1	SM 4500-H B
GENERAL				
COD	88	mg/L	5	SM 5220 D
OIL & GREASE, TOTAL	5.1	mg/L	5	EPA 1664
TOTAL SUSPENDED SOLIDS	132	mg/L	2	SM 2540 D
METALS BY ICP-MS (TOTAL) - 3				
COPPER	0.183	mg/L	0.0002	EPA 200.8
LEAD	0.420	mg/L	0.0001	EPA 200.8
ZINC	1.47	mg/L	0.0005	EPA 200.8
OUTSIDE				
MERCURY	0.000831	mg/L	0.000100	EPA 1631

End of Report for Sample ID: **SWM050004**

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Report Date: 06/27/05
Validated By:

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 04/01/05 8:50 **System ID** AJ02926 **Sample ID** **SWM050003**

Page No.: 1

Proj./Company Name: SCHNITZER STEEL INTERNATIONAL
Address/Location: 12005 N BURGARD

Date Received: 04/01/05

Sample Status: COMPLETE AND VALIDATED

Proj Subcategory: INDUSTRIAL STORMWATER SAMPLING
Sample Point Code: 06
IMS File # / LCODE: 3060.001 SCHNITZSW

Sample Type: GRAB
Sample Matrix: STORMWTR
Collected By: ABW

Comments:

Test Parameter	Result	Units	MRL	Method
FIELD				
pH (FIELD)	6.3	pH Units	0.1	SM 4500-H B
GENERAL				
COD	<5	mg/L	5	SM 5220 D
OIL & GREASE, TOTAL	24.1	mg/L	5	EPA 1664
TOTAL SUSPENDED SOLIDS	8	mg/L	2	SM 2540 D
METALS BY ICP-MS (TOTAL) - 3				
COPPER	0.0104	mg/L	0.0002	EPA 200.8
LEAD	0.0220	mg/L	0.0001	EPA 200.8
ZINC	0.0594	mg/L	0.0005	EPA 200.8
OUTSIDE				
MERCURY	0.0000386	mg/L	0.000005	EPA 1631

End of Report for Sample ID: **SWM050003**

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Report Date: 06/27/05
Validated By:

City of Portland
Water Pollution Control Laboratory
Laboratory Analysis Report

Sample Date/Time 04/01/05 9:30 **System ID** AJ02929 **Sample ID** **SWM050006**

Page No.: 1

Proj./Company Name: SCHNITZER STEEL INTERNATIONAL
Address/Location: 12005 N BURGARD

Date Received: 04/01/05

Sample Status: COMPLETE AND VALIDATED

Proj Subcategory: INDUSTRIAL STORMWATER SAMPLING
Sample Point Code: 20
IMS File # / LCODE: 3060.001 SCHNITZSW

Sample Type: GRAB
Sample Matrix: STORMWTR
Collected By: ABW

Comments:

Test Parameter	Result	Units	MRL	Method
FIELD				
pH (FIELD)	6.3	pH Units	0.1	SM 4500-H B
GENERAL				
COD	38	mg/L	5	SM 5220 D
OIL & GREASE, TOTAL	5.3	mg/L	5	EPA 1664
TOTAL SUSPENDED SOLIDS	44	mg/L	2	SM 2540 D
METALS BY ICP-MS (TOTAL) - 3				
COPPER	0.0383	mg/L	0.0002	EPA 200.8
LEAD	0.0555	mg/L	0.0001	EPA 200.8
ZINC	0.264	mg/L	0.0005	EPA 200.8
OUTSIDE				
MERCURY	0.0000833	mg/L	0.000005	EPA 1631

End of Report for Sample ID: **SWM050006**

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Report Date: 06/27/05
Validated By:

1200-Z STORMWATER MONITORING DATA

SCHNITZER STEEL INTERNATIONAL

Org ID: 200

12005 N BURGARD RD

Parameter (mg/L)	Cu	Pb	Zn	TSS	O&G	pH (stu)
Benchmark	0.1	0.4	0.6	130	10	5.5 - 9.0

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
04-05	3/26/2005	self	0.063	0.114	0.58	4	3.7	7.02	
04-05	12/13/2004	self	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.29	
03-04	5/8/2004	self	0.086	0.16	0.4	16	6.7	7.01	
03-04	12/5/2003	self	0.086	0.095	0.55	61	7.4	7.48	
02-03	2/16/2003	self	0.071	0.096	0.46	14	6.9	7.23	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.08	
05-06	11/25/2005	self	[illegible]	0.223	[illegible]	50	5.9	7.98	
04-05	4/1/2005	*city*	[illegible]	[illegible]	[illegible]	[illegible]	5.1	7.3	820
04-05	3/26/2005	self	0.066	0.119	0.061	12	< 2	6.81	
04-05	12/13/2004	self	[illegible]	0.398	[illegible]	130	9.6	7.21	
03-04	5/8/2004	self	0.026	0.064	0.24	8	3.2	7.67	
03-04	12/5/2003	self	0.099	0.048	[illegible]	22	< 5	8.12	
02-03	6/20/2003	self	< 0.001	< 0.001	0.026	4	< 2	7.67	
02-03	2/16/2003	self	[illegible]	0.206	[illegible]	106	[illegible]	7.42	
01-02	5/22/2002	self	0.019	< 0.002	0.076	11	< 5	7.38	
01-02	10/30/2001	self	0.099	0.0704	0.252	10	< 5	7.19	
00-01	10/20/2000	self	[illegible]	[illegible]	[illegible]	82	10	8.2	

This report is intended for internal use. The City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published. For compliance or reporting purposes, the user should refer to the acutal laboratory reports.

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
99-00	3/4/2000	self	[redacted]	0.24	[redacted]	77	< 5	7.58	
99-00	11/11/1999	self	[redacted]	[redacted]	[redacted]	88	9	7.42	
98-99	5/3/1999	self	0.051	0.027	0.262	<	<	7.09	
98-99	11/23/1998	self	[redacted]	0.344	[redacted]	[redacted]	9	6.87	
97-98	5/20/1998	self	0.586	0.394	2.51	94	5.1	7.96	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	[redacted]	0.071	0.26	10	6.1	7.82	
05-06	11/25/2005	self	0.034	< 0.005	0.075	10	3	6.96	
04-05	3/26/2005	self	0.055	0.084	[redacted]	21	< 2	7.13	
04-05	12/13/2004	self	[redacted]	0.21	0.49	48	3.1	6.76	
03-04	5/8/2004	self	0.039	< 0.01	0.035	4	2.3	7.85	
03-04	12/5/2003	self	0.023	0.0033	0.07	< 5	< 5	7.45	
02-03	6/20/2003	self	< 0.001	< 0.001	0.041	48	7	7.85	
02-03	2/16/2003	self	[redacted]	0.0068	0.04	< 5	< 5	8.23	
01-02	10/30/2001	self	0.045	0.0136	0.04	< 5	< 5	7.94	
00-01	10/20/2000	self	[redacted]	0.02	0.088	30	< 5	7.11	
99-00	3/4/2000	self	[redacted]	0.039	0.218	36	< 5	[redacted]	
99-00	11/11/1999	self	[redacted]	0.138	[redacted]	[redacted]	9	8.46	
98-99	5/3/1999	self	[redacted]	0.003	0.064	< 5	< 5	7.06	
98-99	11/23/1998	self	[redacted]	0.264	[redacted]	[redacted]	[redacted]	[redacted]	
97-98	5/20/1998	self	4.23	0.456	2.1	360	5.7	7.74	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	0.007	0.005	0.022	5	< 2	7.73	

This report is intended for internal use. The City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published. For compliance or reporting purposes, the user should refer to the acutal laboratory reports.

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	11/25/2005	self	0.007	0.023	0.098	6.3	< 2	7.01	
04-05	4/1/2005	city	[redacted]	[redacted]	[redacted]	[redacted]	5.1	7.2	88
04-05	3/26/2005	self	0.093	0.217	0.59	60	< 2	7.01	
04-05	12/13/2004	self	[redacted]	[redacted]	[redacted]	100	4.4	7.05	
03-04	5/8/2004	self	0.024	0.036	0.086	8	2.6	7.88	
03-04	12/5/2003	self	0.032	0.0229	0.098	12	5.3	8.04	
02-03	2/16/2003	self	0.04	0.0256	0.053	8	< 5	8.44	
01-02	5/22/2002	self	0.013	< 0.002	0.015	< 5	< 5	7.91	
01-02	10/30/2001	self	0.027	0.0276	0.082	10	< 5	7.76	
00-01	10/20/2000	self	[redacted]	0.375	[redacted]	[redacted]	< 5	8.39	
99-00	3/4/2000	self	[redacted]	0.228	[redacted]	112	5	7.91	
99-00	11/11/1999	self	[redacted]	0.24	[redacted]	113	9	7.2	
98-99	5/3/1999	self	0.022	0.008	0.074	< 5	< 5	7.04	
98-99	11/23/1998	self	[redacted]	0.284	0.49	[redacted]	9	8.36	
97-98	5/20/1998	self	0.431	0.562	1.61	130	3.3	7.6	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	< 0.005	< 0.005	< 0.003	< 1	< 2	8.84	
05-06	11/25/2005	self	< 0.005	< 0.005	0.004	9.3	< 2	8.1	
04-05	4/1/2005	self	0.0104	0.022	0.0594	8	[redacted]	6.3	< 5
04-05	3/26/2005	self	0.008	0.019	0.034	26	< 2	7.58	
04-05	12/13/2004	self	0.023	0.04	0.1	14	< 2	7.55	
03-04	5/8/2004	self	0.006	0.037	0.016	9	< 2	7.56	
03-04	12/5/2003	self	0.012	0.0142	0.061	27	< 5	7.37	
00-01	10/20/2000	self	[redacted]	0.23	[redacted]	[redacted]	< 5	8.3	

This report is intended for internal use. The City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published. For compliance or reporting purposes, the user should refer to the acutal laboratory reports.

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
99-00	3/4/2000	self	0.079	0.012	0.031	26	< 5	[redacted]	
99-00	11/11/1999	self	[redacted]	0.083	0.274	[redacted]	[redacted]	[redacted]	
98-99	5/3/1999	self	0.073	0.004	0.012	< 5	< 5	7.05	
98-99	11/23/1998	self	[redacted]	0.256	[redacted]	[redacted]	8	8.97	
97-98	5/20/1998	self	0.801	0.16	0.561	412	3.9	7.98	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
02-03	2/16/2003	self	< 0.01	< 0.004	< 0.01	< 5	< 5	7.34	
01-02	5/22/2002	self	0.025	0.0159	0.106	59	< 5	8.42	
01-02	10/30/2001	self	0.034	0.0592	0.231	36	< 5	8.1	
00-01	10/20/2000	self	0.014	0.015	0.048	8	< 5	7.75	
99-00	3/4/2000	self	0.029	0.036	0.085	49	< 5	8.52	
99-00	11/11/1999	self	< 0.01	0.006	0.017	35	< 5	[redacted]	
98-99	5/3/1999	self	0.012	0.003	0.011	8	< 5	7.47	
98-99	11/23/1998	self	[redacted]	0.088	0.237	19	6	8.15	
97-98	5/20/1998	self	0.203	0.078	0.288	270	4.5	8.16	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	11/25/2005	self	< 0.005	< 0.005	0.038	< 1	< 2	7.99	
04-05	12/13/2004	self	0.037	0.066	0.19	15	2.4	7.71	
03-04	12/5/2003	self	0.011	0.0246	0.107	8	< 5	7.98	
02-03	6/20/2003	self	[redacted]	0.05	[redacted]	36	4	7.66	
01-02	10/30/2001	self	[redacted]	0.286	[redacted]	[redacted]	< 5	7.67	
99-00	3/10/2000	self	[redacted]	0.158	[redacted]	99	< 5	7.28	
99-00	11/11/1999	self	0.052	0.034	0.547	13	[redacted]	8.25	

This report is intended for internal use. The City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published. For compliance or reporting purposes, the user should refer to the acutal laboratory reports.

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	[illegible]	0.243	0.57	[illegible]	3.4	[illegible]	
05-06	11/25/2005	self	0.075	0.074	0.21	40	< 2	6.91	
04-05	3/26/2005	self	0.058	0.086	0.17	34	6	8.1	
03-04	5/8/2004	self	[illegible]	0.354	[illegible]	[illegible]	8.9	7.68	
02-03	2/16/2003	self	0.06	0.067	0.225	34	5.1	7.68	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	0.1	0.224	[illegible]	92	< 2	[illegible]	
04-05	3/26/2005	self	0.026	0.054	0.29	5	< 2	7.93	
04-05	12/13/2004	self	0.033	0.019	0.2	12	2	7.45	
03-04	5/8/2004	self	[illegible]	0.183	0.36	64	3.7	8.11	
03-04	12/5/2003	self	0.029	0.0415	0.175	23	< 5	8.03	
02-03	2/16/2003	self	0.071	0.114	0.427	45	< 5	8.2	
00-01	10/20/2000	self	0.09	0.094	0.342	64	< 5	7.18	
99-00	3/10/2000	self	[illegible]	0.177	0.429	40	[illegible]	7.09	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
05-06	3/16/2006	self	0.034	0.074	0.22	[illegible]	2.5	8.12	
05-06	11/25/2005	self	< 0.005	< 0.005	0.006	3	< 2	7.86	
04-05	4/1/2005	self	0.0383	0.0555	0.264	44	5.3	6.3	38
04-05	3/26/2005	self	0.019	0.027	0.29	8	< 2	7.92	
04-05	12/13/2004	self	0.009	< 0.005	0.028	18	< 2	7.38	
03-04	5/8/2004	self	0.018	0.025	0.1	32	3.6	8.01	
03-04	12/5/2003	self	< 0.01	0.002	0.013	6	< 5	7.86	
02-03	6/20/2003	self	< 0.001	< 0.001	0.025	25	2	8.01	

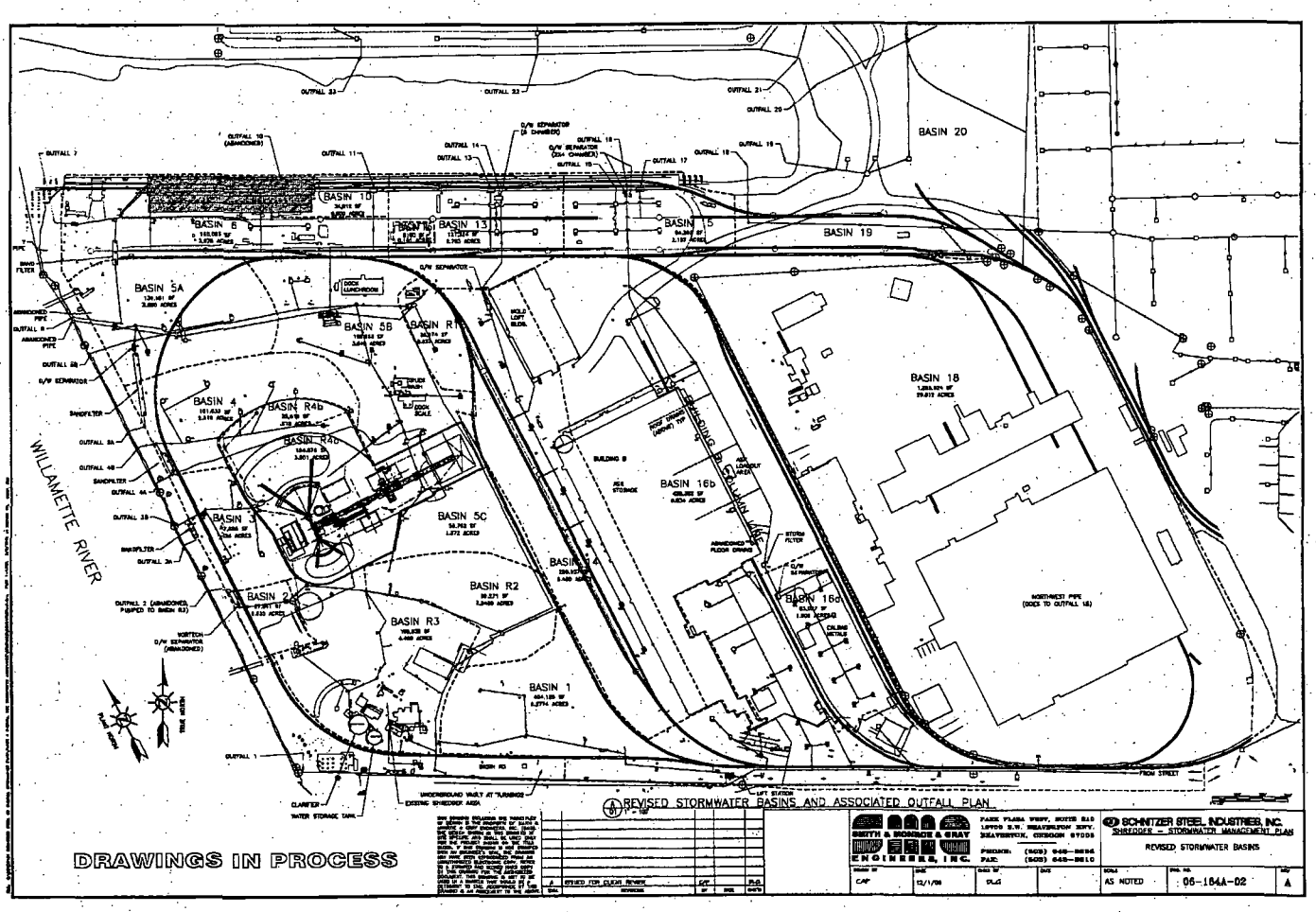
This report is intended for internal use. The City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published. For compliance or reporting purposes, the user should refer to the acutal laboratory reports.

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
02-03	2/16/2003	self	< 0.01	0.0046	0.047	7	< 5	8.44	
01-02	10/30/2001	self	0.018	0.0282	0.057	28	< 5	8.23	
00-01	10/20/2000	self	< 0.001	0.003	0.024	16	< 5	6.95	
99-00	3/4/2000	self	< 0.01	0.006	0.018	14	< 5	[redacted]	
99-00	11/11/1999	self	< 0.01	0.006	0.017	20	< 5	[redacted]	

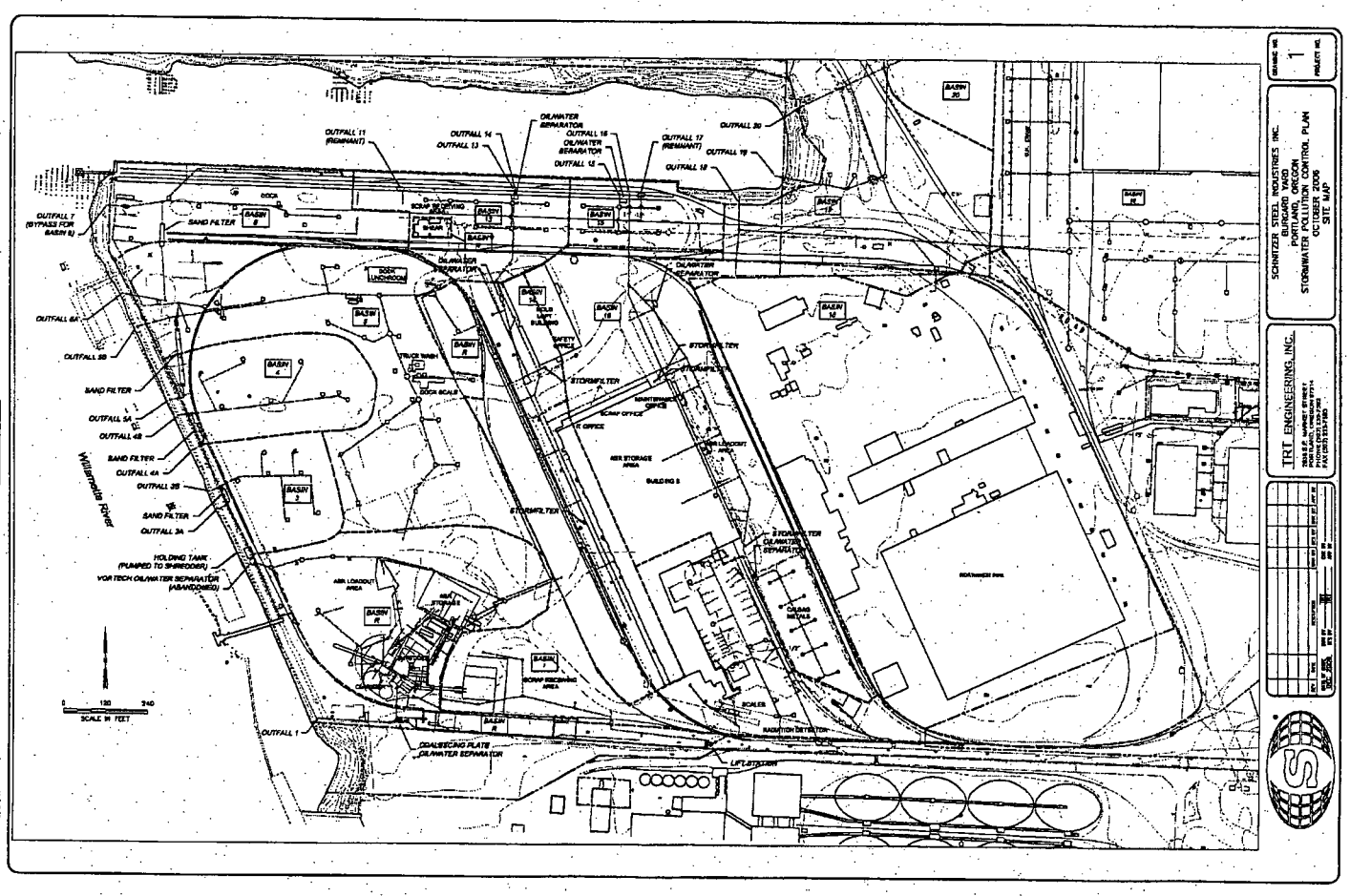
Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
01-02	5/22/2002	self	0.017	0.0236	0.268	13	[redacted]	7.22	
01-02	10/30/2001	self	0.081	0.153	[redacted]	14	5	7.04	
00-01	10/20/2000	self	0.03	0.019	0.287	13	9.6	7.31	
99-00	3/4/2000	self	[redacted]	0.396	[redacted]	[redacted]	7	7.79	
99-00	11/11/1999	self	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	7.61	
98-99	5/3/1999	self	0.085	0.126	[redacted]	23	[redacted]	7.21	
98-99	11/23/1998	self	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	7.56	
97-98	5/20/1998	self	0.62	1.06	5.72	208	12.6	7.64	

Permit Year	Sample Date	Tester	Copper	Lead	Zinc	TSS	O/G	pH	COD
01-02	5/22/2002	self	[redacted]	0.164	[redacted]	73	7.1	7.09	

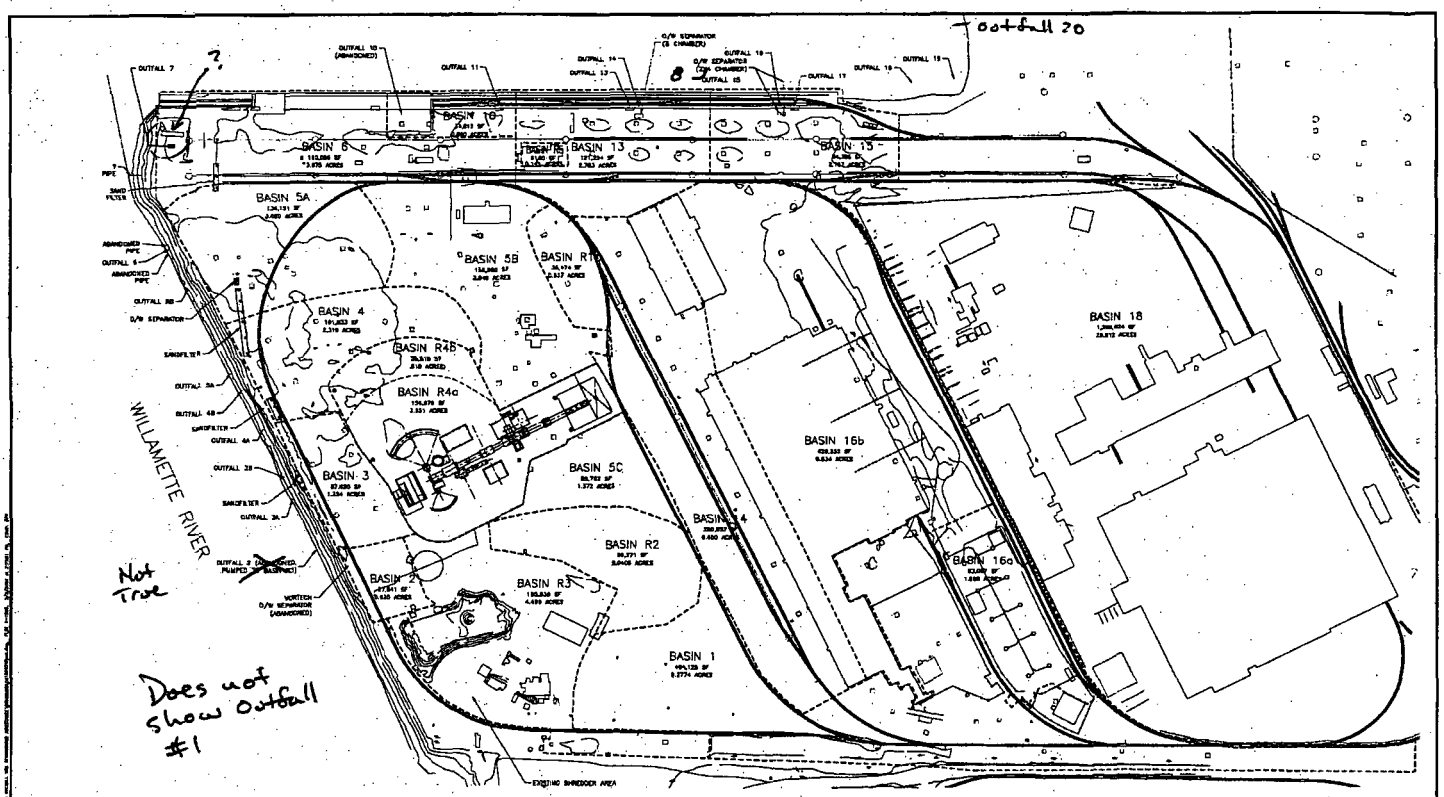
This report is intended for internal use. The City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published. For compliance or reporting purposes, the user should refer to the acutal laboratory reports.



SCHN00245271



SCHN00245272



SCHN00245273

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Water Pollution Control Laboratory
6543 N. Burlington Ave., Portland, Oregon 97203-5452
(503) 823-5600

May 2, 2005

Mr. Jim Jakubiak
Schnitzer Steel Industries, Inc.
PO Box 10047
Portland, OR 97296-0047

Subject: Annual Facility Storm Water Inspection, April 1, 2005

Dear Mr. Jakubiak:

City of Portland staff recently conducted an inspection of your facility, located at 12005 N. Burgard, to assess compliance with conditions contained in its NPDES 1200-Z Storm Water Permit. Overall, the results of the inspection were satisfactory and, except for the following, there were no noted deficiencies with respect to permit compliance.

- As discussed, Table 1 in your Stormwater Pollution Control Plan should be updated to reflect the current monitoring program at your facility. Also, please consider adding a column on Table 1 to show approximate dates that stormwater treatment systems were installed. Historically, there have been elevated metals concentrations from some outfalls and sampling has been discontinued at these outfalls based on analytical results of one or two sampling events below benchmarks. Showing that reduced contaminants in stormwater are directly related to treatment system installation would help support the rationale for removing some outfalls from your monitoring program.

Your assistance with the inspection is appreciated. If you have any questions regarding this letter, please contact me at 503-823-7383. Thank you.

Sincerely,

Aaron B. Wieting, R.G., C.H.M.M.
Environmental Technician
Industrial Stormwater Program

DEQ USE ONLY
Application #:
File #:
EPA #:
LLID/RM:
DOC Conf.:
Notes:

RENEWAL APPLICATION
NPDES STORM WATER DISCHARGE
GENERAL PERMIT #1200-Z

Oregon Department of Environmental Quality

DEQ USE ONLY
Received:

A. REFERENCE INFORMATION

1. Legal Name: Schnitzer Steel Industries, Inc.	2. Common Name: Schnitzer Steel Products Co.
3. DEQ File #: 108103	4. Is the applicant the owner of the facility? ☒ Yes ☐ No
5. Facility Primary SIC code: 5093 County: Multnomah	6. Facility Physical Address: 12005 N. Burgard Road City, State, Zip Code: Portland, OR 97203
7. Legal Contact: Jim Goodrich Mailing Address: PO Box 10047	Telephone #: 503/286-5771 Email: jgoodrich@schn.com City, State, Zip Code: Portland, OR 97296-0047
8. Facility Contact: Jim Goodrich Mailing Address: PO Box 10047	Telephone #: 503/286-5771 Email: jgoodrich@schn.com City, State, Zip Code: Portland, OR 97296-0047
9. Invoice to: Jim Goodrich Billing Address: PO Box 10047	Telephone #: 503/286-5771 Email: jgoodrich@schn.com City, State, Zip Code: Portland, OR 97296-0047

B. STORMWATER DISCHARGE INFORMATION

1. Briefly describe any activities that have been added, removed or changed since your previous application:
Schnitzer Steel continues to upgrade their facility with significant investment in operational structures (e.g. new dock) and equipment (e.g. installation on-going of new metal shredder). As improvements are made to facility infrastructure, including the facility stormwater conveyance system, the stormwater plan will be updated and DEQ notified.
2. Briefly describe any changes made to the number or locations of stormwater outfalls or flows off your property:
The Schnitzer Steel facility currently has 16 active outfalls as described in the attached Stormwater Pollution Prevention Plan (table 1). Over the years several outfalls have been abandoned with grout as facility improvements described above have been made.
3. Have any changes been made to cause your stormwater to discharge to a different waterbody, storm sewer system, or seepage system (i.e., dry well)? ☐ YES, explain below: ☒ NO
4. Have you submitted an updated Storm Water Pollution Control Plan (SWPCP) that thoroughly describes these changes with this application? ☒ YES, included with application ☐ NO, existing SWPCP is up-to-date and no changes are necessary.

C. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE

I hereby certify that the information contained in this application is true and correct to the best of my knowledge and belief. In addition, I agree to pay all permit fees required by Oregon Administrative Rules 340-45. This includes a renewal application fee to renew the permit and a compliance determination fee invoiced annually by DEQ to maintain the permit.

JIM GOODRICH	GEN. MGR.
Name of Legally Authorized Representative (Type or Print)	Title
	12-20-06
Signature of Legally Authorized Representative	Date

SCHN00245277

Please answer all questions. An incomplete application will not be processed.
If the information requested is not applicable, please indicate as such.

A. REFERENCE INFORMATION:

1. Enter the legal name of the applicant. This must be the **legal** Oregon name (i.e., Acme Products, Inc.) or the **legal** representative of the company if it operates under an assumed business name (i.e., John Smith, dba Acme Products). The name must be a legal, active name registered with the Oregon Department of Commerce, Corporation Division (503) 378-4752, unless otherwise exempted by their regulations. The permit will be issued to the legal name of the applicant.

   If the legal name of the applicant has changed since the initial permit was issued or the permit needs to be transferred to a new owner, a *Name Change/Transfer of Ownership* form must also be submitted with this application. This form is available by contacting a DEQ regional office listed below or at http://www.deq.state.or.us/wq/wqpermit/PermitForms.htm.
2. Enter the common name of the facility or operation if different than the legal name.
3. Enter the DEQ file number (this number may be found on the first page of your permit).
4. Indicate if the applicant is the owner of the facility.
5. Provide the primary Standard Industrial Classification (SIC) code and county for the facility
6. Enter the physical location of the facility (not mailing address), including city, state, and zip code.
7. Enter the name, telephone number, and mailing address of the Legal Contact. The Legal Contact is the person that receives official correspondence from DEQ, such as renewal notices or notices of noncompliance, and may be contacted if there are questions about this application.
8. Enter the name, telephone number and mailing address of the Facility Contact if different from the Legal Contact. The Facility Contact is the person located at the facility that has specific knowledge of the facility or operation under permit (e.g., the treatment plant operator), and may be contacted if there are specific questions about this application.
9. Enter invoicing information for billing purposes if different from the Legal Contact (e.g., "Invoice To: Business Office - Accounts Payable").

B. STORM WATER DISCHARGE INFORMATION:

As required by the permit, your Stormwater Pollution Control Plan (SWPCP) must be up-to-date. Please review the latest SWPCP that you submitted to DEQ or its local agent and update the plan to meet new permit conditions and to account for changes to site conditions and/or stormwater best management practices. Briefly explain those changes in the application and submit an updated SWPCP along with the application that thoroughly describes those changes.

C. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE:

A legally authorized representative must sign the application. The following are authorized to sign the document:

- **Corporation** — President, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million that is authorized in accordance to corporate procedure to sign such documents
- **Partnership** — General partner *[list of general partners, their addresses and telephone numbers]*
- **Sole Proprietorship** — Owner(s) *[each owner must sign the application]*
- **City, County, State, Federal, or other Public Facility** — Principal executive officer or ranking elected official
- **Limited Liability Company** — Member
- **Trusts** — Acting trustee *[list of trustees, their addresses and telephone numbers]*

APPLICATION SUBMITTAL:

Please send the completed renewal application to the appropriate DEQ regional office below by **December 29, 2006. No fees are required with this application.** DEQ revised its fees and no longer requires renewal fees. Instead, the renewal fees are incorporated into one fee that is invoiced annually.

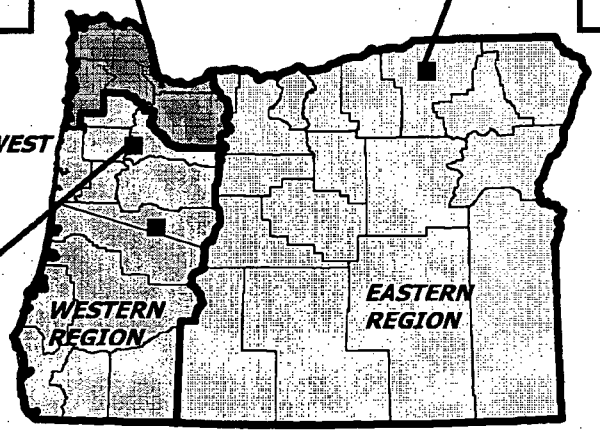
Send this form to the appropriate DEQ regional office (see map on next page): No fees are required with this application		
DEQ Northwest Region 2020 SW 4th Ave., Suite 400 Portland, OR 97201-4987 (503) 229-5263 or 1-800-452-4011	DEQ Western Region 750 Front St. NE, Ste. 120 Salem, OR 97301-1039 (503) 378-8240 or 1-800-349-7677	DEQ Eastern Region 700 SE Emigrant, Suite 330 Pendleton, OR 97801 (541) 276-4063 or 1-800-452-4011

SCHN00245278

DEQ Regional Offices

Northwest Region
2020 SW 4th Ave., #400
Portland, OR 97201
(503) 229-5263
1-800-452-4011
(503) 229-6945 TTY
(503) 229-6945 fax

Eastern Region
700 SE Emigrant, #330
Pendleton, OR 97801
(541) 276-4063
1-800-452-4011
(541) 276-4063 TTY
(541) 278-0168 fax



Western Region
750 Front St. NE, #120
Salem, OR 97301
(503) 378-8240
1-800-349-7677
(503) 378-3684 TTY
(503) 373-7944 fax

NORTHWEST REGION
(county)

Clackamas	Multnomah
Clatsop	Tillamook
Columbia	Washington

WESTERN REGION
(county)

Benton	Douglas	Lane	Marion
Coos	Jackson	Lincoln	Polk
Curry	Josephine	Linn	Yamhill

EASTERN REGION
(county)

Baker	Gilliam	Hood River	Lake	Sherman	Wallowa
Crook	Grant	Jefferson	Malheur	Umatilla	Wasco
Deschutes	Harney	Klamath	Morrow	Union	Wheeler

DEQ HEADQUARTERS
811 SW 6th Avenue
Portland, OR 97204
1-800-452-4011 (toll-free inside Oregon)
(503) 229-5696 / (503) 229-6993 TTY

SCHN00245279