

Dust Sampling at the Montrose Superfund Site

PREPARED FOR: Kevin Mayer, Remedial Project Manager/EPA Region 9

COPY TO: Natasha Raykhman/CH2M HILL

PREPARED BY: Cynthia Wetmore/EPA Region, Natasha Raykhman/CH2M HILL, Mike Grigorieff/CH2MHILL

DATE: May 15, 2013

The United States Environmental Protection Agency (EPA) collected dust samples at the Montrose Chemical Corporation (Montrose) property during work hours on April 24 through 26, 2013. This period of sampling was selected to cover excavation of the treatment pad area. This activity involved one of the highest levels of soil handling expected during this construction project, and was performed at the Montrose property, which is the area anticipated to potentially contain DDT-contaminated soil. In addition to dust sampling activities performed by EPA, Montrose also continued their routine gross dust particulate monitoring required for this project. Presented below is a brief discussion of dust sampling and particulate monitoring procedures, laboratory analysis of dust samples, and dust particulate monitoring and sampling results.

Dust Sampling and Particulate Monitoring Procedures

Dust sampling was performed with a dust sampler, which included SKC West PCXR4 Universal Pump and polyurethane foam (PUF) sampling tubes. Prior to sampling, the pump of the dust sampler was calibrated using a 5 to 5,000 milliliters per minute (mL/min) DC-Lite Electronic Calibrator to set the flow rate to approximately 1 liter per minute (L/min). All calibration and sampling was performed according to written manufacturer's instructions.

The dust sampler was placed at the Montrose property, downwind of the area of excavation and other construction activities referred to as the "exclusion zone" but within the fenced property boundary and perimeter windscreen. The sample start time was recorded on the sampling log sheet. During sampling, the apparatus was moved along with the downwind gross dust monitor (these devices were placed on the same tripod) as wind direction changed to remain downwind of excavation activities. Sampling was performed for time periods ranging from 380 to 397 minutes per sample. At the end of the sampling period, sampling tubes were detached from the pump and tubing, wrapped in aluminum foil, placed in a glass jar, and stored in a cooler at 4 degrees Celsius (°C), in accordance with sampling and laboratory requirements. The elapsed time displayed on the pump and the time of day at the end of sampling was recorded on the sampling log sheet.

As mentioned above, Montrose also continued their gross dust particulate monitoring simultaneously with EPA dust sampling activities. For gross dust particulate monitoring, dust levels are measured every 15 minutes upwind and downwind of the exclusion zone, typically near but within the property boundary. The required standard for dust control is that there cannot be an increase more than 0.05 milligrams per cubic meter (mg/m^3) in dust levels between the measurements collected upwind and downwind of the construction activity. Any exceedance of this standard requires soil handling methods to be modified to lower the dust levels. If modifying the procedures does not reduce dust levels, work must stop until wind levels drop.

Laboratory Analysis

Laboratory analysis of dust samples was performed by Columbia Analytical Services. The samples were analyzed for DDT in accordance with EPA Method TO-10A, which utilizes a gas chromatograph with dual electron capture detectors (GC/ECD). This analytical method is a standard procedure for dust sample analysis of pesticides, including DDT. A reporting limit of equal-to or less-than 0.75 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) was requested for this analysis; one $\mu\text{g}/\text{m}^3$ is equivalent to 0.001 mg/m^3 . EPA estimates that this reporting limit corresponds to a 10^{-6} excess cancer risk for a one year residential exposure to DDT-impacted dust under highly conservative

assumptions as described below, and therefore is an appropriate standard for evaluating health risk concerns associated with exposure to dust during this construction project.

Dust Monitoring and Sampling Results

Gross Dust Particulate Monitoring Results

- April 24, 2013 – no exceedance of dust standard was registered. The difference between upwind and downwind readings ranged from 0 to 0.024 mg/m³.
- April 25, 2013 – a small number of intermittent dust reading exceedances were registered in the morning; the difference between upwind and downwind dust readings ranged between 0.052 and 0.077 mg/m³. The predominant wind direction on this day was from west to east, although there was little to no wind in the morning (wind speeds between 0 and 5 miles per hour). Based on these readings, adjustments were made to the soil handling procedures including increased watering of truck traffic routes, replacement of plastic sheeting, and repositioning of temporary dust control fencing. After these adjustments, dust readings throughout the remainder of the day were within the acceptable range. The difference between upwind and downwind readings throughout the remainder of the day ranged from 0 to 0.050 mg/m³.
- April 26, 2013 – no exceedance of dust standard was registered. The difference between upwind and downwind readings ranged from 0 to 0.046 mg/m³.

Dust Sampling Results

Table 1 presents the results of dust sampling performed by EPA during the period of April 24 through 26, 2013, as well as the laboratory reporting limits for each sample. These results were compared against the appropriate risk standards estimated by EPA. Specifically, in February 2013, EPA calculated the theoretical dust DDT concentration that would result in a 10⁻⁶ excess cancer risk, assuming a constant dust level of 0.05 mg/m³, a resident living on the property line, a 24 hour per day and 7 days per week exposure, and the dust being 100 percent respirable. Based on these calculations, the dust concentrations that would result in an unacceptable risk were 0.75 µg/m³ for a 1-year exposure, and 9 µg/m³ for a 1-month exposure. The results of dust sampling were, therefore, compared to both the 1-year 10⁻⁶ excess cancer risk standard of 0.75 µg/m³ and the 1-month 10⁻⁶ excess cancer risk standard of 9 µg/m³.

As shown in Table 1, concentrations of DDT measured in dust samples collected at the site did not exceed the exposure standards described above. In two of the three samples, DDT concentrations were nondetect. In one sample collected on April 25, 2013, DDT was detected at a concentration below both 1-year and 1-month 10⁻⁶ excess cancer risk standards.

TABLE 1
Dust Sampling Results

	April 24	April 25	April 26	1-year 10 ⁻⁶ excess cancer risk	1-month 10 ⁻⁶ excess cancer risk
DDT Concentration in Dust Sample	Nondetect	0.32 µg/ m ³	Nondetect	0.75 µg/m ³	9.0 µg/m ³
Reporting Limit	0.12 µg/ m ³	0.13 µg/ m ³	0.13 µg/ m ³	NA	NA

NA – not applicable

Conclusions

Based on the results of dust sampling described above, the levels of DDT in dust are significantly (i.e., more than 50 percent) lower than the risk standard estimated by EPA for a 1 year exposure and 30 times lower than the risk standard for a 1 month exposure at a 10⁻⁶ excess cancer risk level. These samples were collected during construction activities involving the highest amount of soil handling expected during this construction project, they were collected within the fenced Montrose property and perimeter windscreen which further reduces the migration of dust off-property, and in the area that may potentially contain DDT-contaminated soil (i.e., Montrose

property). In addition, the risk standards estimated by EPA are conservative because they assume up to a 1 year exposure to DDT-impacted dust, assume the lowest potential risk level of 10^{-6} (acceptable EPA Risk levels are 10^{-4} to 10^{-6}), and a hypothetical resident living on the Montrose property with a 24-hour per day and 7 days per week exposure scenario. Meanwhile, the work at the Montrose property that involves grading of the treatment plant area and handling of soils potentially contaminated with DDT is anticipated to be completed in about 8 weeks; pipeline trenching activities in each particular area are limited to several weeks; the work is limited to 8 hours per day, 5 days per week, and the DDT-impacted soils are covered with plastic during non-working hours and finally, the nearest residences are located at a distance at least several hundred feet southeast of the Montrose property (predominant wind direction for the data collected is to the east, not southeast). Based on the above, dust levels generated as a result of construction activities at the Montrose Superfund Site do not pose an unacceptable risk to the community.

ATTACHMENTS

- 1 – Lab results
- 2 – Dust Inspection Reports, CH2MHill April 24 and April 26

LABORATORY REPORT

May 6, 2013

Christopher Waller
CH2M Hill
6 Hutton Centre Dr, Suite 700
Santa Ana, CA 92707

RE: Montrose TGRS / 385687.FI.01

Dear Christopher:

Enclosed are the results of the samples submitted to our laboratory on April 27, 2013. For your reference, these analyses have been assigned our service request number P1301793.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental



By Kate Aguilera at 12:15 pm, May 06, 2013

Kate Aguilera
Project Manager

Client: CH2M Hill
Project: Montrose TGRS / 385687.FI.01

Service Request No: P1301793

CASE NARRATIVE

The samples were received intact under chain of custody on April 27, 2013 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Pesticide Analysis

The samples were extracted and analyzed for 4,4-DDT in accordance with EPA Method TO-10A. An aliquot of each extract was injected into a gas chromatograph with dual electron capture detectors (GC/ECD). This method is not included on the laboratory's DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP scope of accreditation.

Sample extraction was performed at the laboratory's off-site extraction facility located at 2360 Shasta Way, Suite G, Simi Valley, CA 93065.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of Columbia Analytical Services, Inc. dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Columbia Analytical Services, Inc. dba ALS Environmental – Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L11-203
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	494864
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-12-3
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA01527201 2-2
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.caslab.com, www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

DETAIL SUMMARY REPORT

Client: CH2M Hill
 Project ID: Montrose TGRS / 385687.FI.01

Service Request: P1301793

Date Received: 4/27/2013
 Time Received: 08:25

TO-10A - PEST Low Vol

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	
DS1-L-116	P1301793-001	Air	4/24/2013	14:10	X
DS2-L-106	P1301793-002	Air	4/25/2013	14:03	X
DS3-L-63	P1301793-003	Air	4/26/2013	14:00	X



2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

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Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day (Standard)				CAS Project No. P1301793					
Company Name & Address (Reporting Information) CH2M HILL 6 Hutton Centre Drive Suite 700 Santa Ana, CA 92707				Project Name Montrose TGRS					
Project Manager Natasha Raykhana / Contact: Chris Waller				Project Number 385687.FI.01					
Phone 714-435-6268				P.O. # / Billing Information Bill to Above Project Number					
Fax 714-474-7261				Sampler (Print & Sign) Chris Waller <i>Chris Waller</i>					
Email Address for Result Reporting christopher.waller@ch2m.com				Canister PATRICK VANDERBERG					
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Flow Controller ID (Bar code #, FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method DDT TO-10A	Comments e.g. Actual Preservative or specific instructions Please use a MRL of 0.75 ug/m3 MRL=0.75 ug/m3 MRL=0.75 ug/m3 MRL=0.75 ug/m3
D51-L-116	1	4/24/13	07:33	N/A	N/A	N/A	407L		
D52-L-106	2	4/25/13	07:43	N/A	N/A	N/A	382L		
D53-L-63	3	4/26/13	07:35	N/A	N/A	N/A	383L		

Report Tier Levels - please select Tier I - Results (Default if not specified) _____ Tier II (Results + QC Summaries) _____ Tier III (Results + QC & Calibration Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge _____	EDD required Yes / No _____ Type: _____
Relinquished by: (Signature) <i>Chris Waller</i> Date: 4/26/13 Time: 15:00	Relinquished by: (Signature) <i>Patrick Vandenberg</i> Date: 4/27/13 Time: 0825
Relinquished by: (Signature) _____ Date: _____ Time: _____	Relinquished by: (Signature) _____ Date: _____ Time: _____

Project Requirements (MRLs, OARR) Please see the MRL=0.75 ug/m3
 Cooler / Blank Temperature 4 °C

Sample Acceptance Check Form

Client: CH2M Hill Work order: P1301793
 Project: Montrose TGRS
 Sample(s) received on: 4/27/13 Date opened: 4/27/13 by: MZAMORA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

- | | Yes | No | N/A |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1 Were sample containers properly marked with client sample ID? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 Container(s) supplied by ALS ? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Did sample containers arrive in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Were chain-of-custody papers used and filled out? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Did sample container labels and/or tags agree with custody papers? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Was sample volume received adequate for analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 Are samples within specified holding times? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 Was proper temperature (thermal preservation) of cooler at receipt adhered to?
Cooler Temperature: 4° C Blank Temperature: ° C | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gel Packs | | | |
| 9 Was a trip blank received? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10 Were custody seals on outside of cooler/Box? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Location of seal(s)? _____ Sealing Lid? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were signature and date included? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were seals intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were custody seals on outside of sample container? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Location of seal(s)? _____ Sealing Lid? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were signature and date included? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were seals intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11 Do containers have appropriate preservation , according to method/SOP or Client specified information? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Is there a client indication that the submitted samples are pH preserved? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were VOA vials checked for presence/absence of air bubbles? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12 Tubes: Are the tubes capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Do they contain moisture? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13 Badges: Are the badges properly capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Are dual bed badges separated and individually capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1301793-001.01	PUF (Low Vol)					
P1301793-002.01	PUF (Low Vol)					
P1301793-003.01	PUF (Low Vol)					

Explain any discrepancies: (include lab sample ID numbers): _____
 Samples were received without ID information but were assigned by the PUF serial numbers listed on COC.

RESULTS OF ANALYSIS

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Client: CH2M Hill
Client Project ID: Montrose TGRS / 385687.FI.01

CAS Project ID: P1301793

4,4'-DDT

Test Code: EPA TO-10A
 Instrument ID: HP6890/GC6/ECD/ECD
 Analyst: Zheng Wang
 Sampling Media: Low Vol PUF(s)
 Test Notes:

Date(s) Collected: 4/24 - 4/26/13
 Date Received: 4/27/13
 Date Analyzed: 5/2/13
 Final Extract Volume: 10 ml

Client Sample ID	CAS Sample ID	Sample Volume m ³	Result ng/Sample	MRL ng/Sample	Result µg/m ³	MRL µg/m ³	Data Qualifier
DS1-L-116	P1301793-001	0.407	ND	50	ND	0.12	
DS2-L-106	P1301793-002	0.382	120	50	0.32	0.13	
DS3-L-63	P1301793-003	0.383	ND	50	ND	0.13	
Method Blank	P130430-MB	NA	ND	50	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

NA = Not applicable.

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: CH2M Hill
Client Project ID: Montrose TGRS / 385687.FI.01

CAS Project ID: P1301793

Test Code: EPA TO-10A
 Instrument ID: HP6890/GC6/ECD/ECD
 Analyst: Zheng Wang
 Sampling Media: PUF (Low Volume) Cartridge(s)
 Test Notes:

Date(s) Collected: 4/24 - 4/26/13
 Date(s) Received: 4/27/13
 Date(s) Extracted: 4/30/13
 Date(s) Analyzed: 5/2/13

Client Sample ID	CAS Sample ID	2,4,5,6-Tetrachloro-m-Xylene		Decachlorobiphenyl		Data Qualifier
		% Recovered	Acceptance Limits	% Recovered	Acceptance Limits	
Method Blank	P130430-MB	77	60-120	108	60-120	
Lab Control Sample	P130430-LCS	78	60-120	107	60-120	
Duplicate Lab Control Sample	P130430-DLCS	82	60-120	111	60-120	
DS1-L-116	P1301793-001	75	60-120	100	60-120	
DS2-L-106	P1301793-002	75	60-120	99	60-120	
DS3-L-63	P1301793-003	73	60-120	105	60-120	

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

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Client: CH2M Hill
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: Montrose TGRS / 385687.FI.01

CAS Project ID: P1301793
 CAS Sample ID: P130430-DLCS

Test Code: EPA TO-10A
 Instrument ID: HP6890/GC6/ECD/ECD
 Analyst: Zheng Wang
 Sampling Media: PUF (Low Volume) Cartridge
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Extracted: 4/30/13
 Date Analyzed: 5/02/13
 Volume(s) Analyzed: NA m³

CAS #	Compound	Spike Amount		Result		% Recovery		Project	RPD	RPD	Data
		LCS / DLCS	LCS	DLCS	LCS	DLCS	Acceptance	RPD			
		µg/ml	µg/ml	µg/ml	LCS	DLCS	Limits	Limit	Qualifier		
50-29-3	4,4'-DDT	100	105	105	105	105	70-130	0	15		

MONTROSE – ON-SITE DUST CONTROL INSPECTION CHECK LIST

NAME: BOB CARLEY

DATE/TIME: APRIL 23, 2013 7 AM TO NOON

WEATHER/WIND CONDITIONS: 64 DEG, OVERCAST W/WIND LIGHT FROM SOUTH, CHANGED TO WIND FROM WEST AS TIME APPROACHED MIDDAY.

Dust control procedures may include, (check all observed)

- X Water as a dust suppressant. **Water trucks in use**
- X Only handle soils during low wind conditions. No loading during high wind conditions.
- X Keep the soil piles covered at all times when not in use and limiting the amount of soil uncovered during loading.
- X Manage soil piles to avoid steep sides or faces and minimize number of soil movements.
- X Limit size of work area.
- X Limit vehicular traffic and disturbances within work area.
- Load soil from the upwind side of the soil pile (i.e. west side if wind direction is easterly) or side farthest from the property line. **Did not observe**

Observation of Dust Control Procedures:

The battery mounted tripods were upwind and downwind when I arrived. See observations below. Patrick Vandenberg was using the mobile handheld unit around the site. At the treatment plant site where asphalt layer was carefully being removed, a man with hose was spraying an almost continuous stream of water on the excavation area and equipment. From time to time he also sprayed water on the equipment that was adjacent and breaking up the gravel and cemented dirt layer that exists beneath the asphalt. A portion of the treatment site had already been excavated to final elevation 3 feet or so below ground level. Final treatment plant site elevation is about 3 feet above existing grade. Excavated material is being stockpiled and covered on "middle of site" behind the inspector's trailer.

Dust Measurement System (Locations on page 2):	(Measurement/Time Measured) ¹
Upwind 9:15 a.m.	Conc. .015 mg/cu. meter TWA .018 mg/cu. meter
Downwind 9:30 a.m.	Conc. .017 mg. cu. meter TWA .019 mg/cu. meter
Exclusion zone handheld	Mobile unit being used by Patrick Vandenberg around site

Observation of Dust Measurement Procedures:

- Patrick mentioned the action levels:
1. If the delta across the site is .05 or more there are measures taken. See footnote below
 2. In the pit if outside the zone of 5 mg/cu. m then an action level is called for, respirator
 3. In the pit up to 10 mg/cu. m use respirator
 4. In the pit exceeding 10 mg/cu. m stop activity.

Attach photos (None)

¹ The standard for dust control established by SCAQMD is no more than a 0.05 mg/m³ increase dust levels between upwind and downwind measurements of the construction activity measured downwind from the activity.

Mark on Figure below:

- A - Location of excavation (exclusion zone) Treatment plant pad area
- B- Wind Sock (one on trailer, also Stauffer property SW, and a flag on property directly S
- C – Upwind Dust Monitor located along south fence approx extension of main pipe trench
- D – Downwind Dust Monitor located along north fence approx ext of main pipe trench
- E- Stockpiled Soils mostly directly west of trailer but east of black covered stockpiles
- > General direction of wind during visit was south to north and SW to NE



MONTROSE – ON-SITE DUST CONTROL INSPECTION CHECK LIST

NAME: Christopher Waller / CH2M HILL

DATE/TIME: 04/24/2013 – 7:40 AM

WEATHER/WIND CONDITIONS: Overcast, 61 °F, light wind blowing from south at approximately less than 5 mph.

Dust control procedures may include, (check all observed; X = observed)

- X Water as a dust suppressant.
- X Only handle soils during low wind conditions. No loading during high wind conditions.
- X Keep the soil piles covered at all times when not in use and limiting the amount of soil uncovered during loading.
- X Manage soil piles to avoid steep sides or faces and minimize number of soil movements.
- X Limit size of work area.
- X Limit vehicular traffic and disturbances within work area.
- X Load soil from the upwind side of the soil pile (i.e. west side if wind direction is easterly) or side farthest from the property line. – *Loader operating on a soil pile on side farthest from property line.*

Observation of Dust Control Procedures:

- Water truck actively wetting ground during visit
- All trenches and soil piles covered with plastic, except the current excavation area and the soil pile in the southwest portion of the site that was being worked on by a loader during visit.
- Worker periodically spraying excavation area with water from a hose
- Rumble strips (large, ribbed metal sheets) at entrance of site to reduce vehicle speed

Dust Measurement System (Locations on page 2): **(Measurement/Time Measured)¹**

Upwind	Conc: 0.017 mg/m ³ ; TWA: 0.017 mg/m ³ / 8:00 AM
Downwind	Conc: 0.018 mg/m ³ ; TWA: 0.017 mg/m ³ / 7:50 AM
Exclusion zone handheld	Conc: 0.063 mg/m ³ / 7:45 AM

Observation of Dust Measurement Procedures:

- Two battery operated, continuous gross dust monitors
 - Upwind: ThermoElectron Corp. Model PDF100AN, Serial Number 6724
 - Downwind: ThermoElectron Corp. Model PDF100AN, Serial Number 6722
- Good documentation. Observed worker take readings from upwind, downwind, and exclusion zone monitors.

¹ The standard for dust control established by SCAQMD is no more than a 0.05 mg/m³ increase dust levels between upwind and downwind measurements of the construction activity measured downwind from the activity.

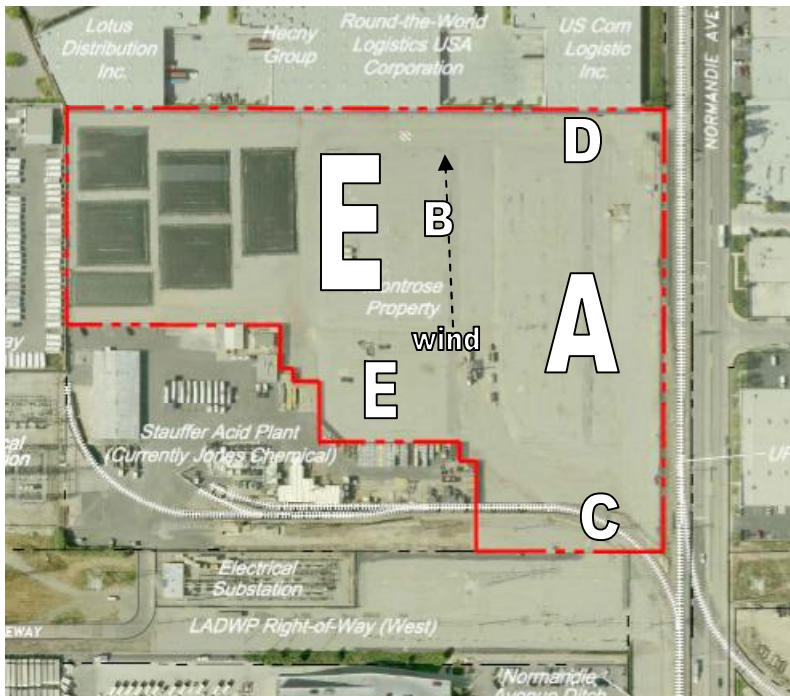
Attach photos



Excavation area. Taken facing southwest.

Mark on Figure below:

- A - Location of excavation (exclusion zone)**
- B- Wind Sock - (on top of trailer)**
- C – Upwind Dust Monitor**
- D – Downwind Dust Monitor**
- E- Stockpiled Soils**
- > General direction of wind during visit**



MONTROSE – ON-SITE DUST CONTROL INSPECTION CHECK LIST

NAME: Christopher Waller / CH2M HILL

DATE/TIME: 04/26/2013 – 14:00

WEATHER/WIND CONDITIONS: Sunny, clear skies, ~70 °F, wind blowing from the west at approximately 5-10 mph.

Dust control procedures may include, (check all observed; X = observed)

- Water as a dust suppressant. *Water truck present on site, did not observe it wet ground during visit, but there was evidence of use earlier in the day (puddles).*
- Only handle soils during low wind conditions. No loading during high wind conditions.
- Keep the soil piles covered at all times when not in use and limiting the amount of soil uncovered during loading.
- Manage soil piles to avoid steep sides or faces and minimize number of soil movements.
- Limit size of work area.
- Limit vehicular traffic and disturbances within work area.
- Load soil from the upwind side of the soil pile (i.e. west side if wind direction is easterly) or side farthest from the property line. – *Loader operating on a soil pile on side farthest from property line.*

Observation of Dust Control Procedures:

- All trenches and soil piles covered with plastic, except the current excavation area and the soil pile in the southwest portion of the site that was being worked on by a loader during visit.
- Rumble strips (large, ribbed metal sheets) at entrance of site to reduce vehicle speed

Dust Measurement System (Locations on page 2):

(Measurement/Time Measured)¹

Upwind	0.005 mg/m ³ / 13:30 (monitors were stored for the day at time of arrival, reading taken from dust monitoring log)
Downwind	0.005 mg/m ³ / 14:00 (monitors were stored for the day at time of arrival, reading taken from dust monitoring log)
Exclusion zone handheld	0.007 mg/m ³ / 14:00

Observation of Dust Measurement Procedures:

- Two battery operated, continuous gross dust monitors were being put away as I arrived.
- Good documentation. Observed worker log that included upwind, downwind, and exclusion zone monitor readings from the entire day.

¹ The standard for dust control established by SCAQMD is no more than a 0.05 mg/m³ increase dust levels between upwind and downwind measurements of the construction activity measured downwind from the activity.

Mark on Figure below:

- A - Location of excavation (exclusion zone)
- B- Wind Sock - (on top of trailer)
- C – Upwind Dust Monitor
- D – Downwind Dust Monitor
- E- Stockpiled Soils
- > General direction of wind during visit

